Kuiu Timber Sale Area

Record of Decision

United States Department of Agriculture

Forest Service

Tongass National Forest
R10-MB-620

May 2008

Abbreviations and Common Acronyms

ANILCA	Alaska National Interest Lands Conservation Act
ASQ	Allowable Sale Quantity
BMPs	Best Management Practices
CCF	Hundred Cubic Feet
CEQ	Council on Environmental Quality
DBH	Diameter at Breast Height
DEIS	Draft Environmental Impact Statement
EFH	Essential Fish Habitat
FEIS	Final Environmental Impact Statement
Forest Plan	Tongass Land and Resource Management Plan, 1997, as amended
GIS	Geographic Information System
HSI	Habitat Suitability Index
IDT	Interdisciplinary Team
LTF	Log Transfer Facility
LUD	Land Use Designation
MBF	Thousand Board Feet
MIS	Management Indicator Species
MMBF	Million Board Feet
MMI	Mass Movement Index
NEAT	NEPA Economic Analysis Tool
NEPA	National Environmental Policy Act
NFMA	National Forest Management Act
NIC	Non-interchangeable Component
OGR	Old-growth Habitat Reserve
RMA	Riparian Management Area
RMO	Road Management Objective
ROS	Recreation Opportunity Spectrum
SEIS	Supplemental Environmental Impact Statement
TTRA	Tongass Timber Reform Act
VCU	Value Comparison Unit
VQO	Visual Quality Objective
WAA	Wildlife Analysis Area

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File Code: 1950
Date: May 13, 2008

Dear Reader:

Enclosed is your copy of the Record of Decision (ROD) for the Kuiu Timber Sale on the Petersburg Ranger District, Tongass National Forest.

The Kuiu Timber Sale Area ROD documents the reasons that I selected Alternative 5 from the Kuiu Timber Sale FEIS prepared in July of 2007.

The 2008 Forest Plan Amendment was prepared while the Kuiu project was being planned. The Forest Plan Amendment was completed with the signing of the Record of Decision (ROD) on January 23, 2008, and is effective on March 17, 2008. The ROD for the Forest Plan Amendment adopts the Timber Sale Program Adaptive Management Strategy, under which portions of the suitable land base become available in three phases. The Kuiu Timber Sale Area project is within the Phase 1 portion of the suitable land base, which allows us to continue planning this project and to implement it once the planning process is completed.

The 2008 Forest Plan Amendment ROD contains transition language for timber sale projects already being planned. This language identifies three different categories of projects, depending on how far along they are in the planning process. The Kuiu project is in Category 2, which requires the Forest Supervisor to review the project and incorporate the new direction in the amended Forest Plan without causing major disruptions in the implementation of the project. The Kuiu project is consistent with the land allocations of the amended Forest Plan. I have determined that the Kuiu Timber Sale Area project is fully consistent with the transition direction contained in the 2008 Forest Plan Amendment ROD.

Copies of the Final EIS (July 2007) and this Record of Decision have been sent to everyone on the project mailing list. Copies are also available for review at public libraries and Forest Service offices throughout the Tongass. If you would like more information please contact the Petersburg Ranger District at 907-772-3871 or email: tbenna@fs.fed.us.

I want to thank those who took the time to review and comment on the Draft EIS. Your interest in the management of the Tongass National Forest is appreciated.

Sincerely,

FORREST COLE
Forest Supervisor

Kuiu Timber Sale Area

Record of Decision

Tongass National Forest
Petersburg Ranger District
USDA Forest Service
Alaska Region

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Abstract: The Responsible Official has selected Alternative 5 from the Kuiu Timber Sale Area. FEIS, which will make approximately 31.4 million board feet of timber available for harvest.

Record of Decision Contents

Kuiu Timber Sale Area Record of Decision

Introduction

The Kuiu Timber Sale Area is located on north Kuiu Island in Southeast Alaska, on the Petersburg Ranger District of the Tongass National Forest, Townships 57, 58 and 59 South, Ranges 71 and 72 East, Copper River Meridian. The project area includes lands within Value Comparison Units (VCUs) 399, 400, 402, and 421, an area of approximately 46,102 acres. The project area is encompassed by Forest Service Roads 6402 and 6415 and the peninsula between Security Bay and Saginaw Bay. Specifically, the project area is located in the north central portion of Kuiu Island, approximately 12 air-miles southwest of the city of Kake.

The 2008 Forest Plan Amendment was prepared while the Kuiu project was being planned. The Forest Plan Amendment was completed with the signing of the Record of Decision (ROD) on January 23, 2008, and was effective on March 17, 2008. The ROD for the Forest Plan Amendment adopts the Timber Sale Program Adaptive Management Strategy, under which portions of the suitable land base become available for project-level in planning in three phases. The Kuiu Timber Sale Area project is within the Phase 1 portion of the suitable land base, which allows us to continue planning this project and to implement it once the planning process is completed.

The 2008 Forest Plan Amendment ROD contains transition language for timber sale projects already being planned. This language identifies three different categories of projects, depending on how far along they are in the planning process. The Kuiu project is in Category 2, which requires the Forest Supervisor to review the project and incorporate the new direction in the amended Forest Plan to the extent this can be done without causing major disruptions in the implementation of the project. The Kuiu project is consistent with the land allocations of the amended Forest Plan. I have determined that the Kuiu Timber Sale Area project is fully consistent with the transition direction contained in the 2008 Forest Plan Amendment ROD.

This Record of Decision documents my decision to implement forest management activities in the Kuiu Timber Sale Area. My decision consists of:

- The location and method of timber harvest, temporary and system road construction, log transfer facilities, and silvicultural practices,
- Any necessary project-specific mitigation measures and monitoring requirements, and
- Whether there may be a significant restriction on subsistence uses.

Purpose and Need

The Kuiu Timber Sale responds to goals and objectives of the Forest Plan and helps move the project area toward desired conditions described in that plan. The purpose of this project is to:

- Provide for a vigorous and healthy forest environment, including management of the timber resource for production of saw timber and other wood products from suitable lands made available for timber harvest on an even-flow, long-term sustained yield basis and in an economically efficient manner,
- Ensure that the small OGR criteria meet the minimum size, spacing and composition,
- Provide diverse opportunities for resource uses that contribute to the local and regional economies of Southeast Alaska, supporting a wide range of natural-resource employment opportunities within Southeast Alaska's communities.

Decision

This Record of Decision (ROD) documents my decision to implement Alternative 5 from the Kuiu Timber Sale Area Final Environmental Impact Statement (Final EIS) published in July 2007.

This decision meets the purpose and need for the project and is consistent with the transition direction contained in the 2008 Forest Plan Amendment ROD. This decision is based on the environmental analysis in the Kuiu Timber Sale Area Final EIS and takes into consideration public comments on the project including comments received on the Draft EIS.

The Forest Plan Amendment ROD approved adjustments to the small old-growth habitat reserve allocations for VCUs 398, 399, and 402. These adjustments were the same as the Option 2 designs analyzed in the Kuiu FEIS. No further adjustments are recommended with this decision.

Decisions on road management objectives for NFS roads associated with this timber sale are included in Appendix 1 of this ROD. These decisions will be brought forward and analyzed in context of the whole Kuiu Road System during the District Access and Travel Management process.

I have determined that there is not a significant possibility of a significant restriction on subsistence uses of wildlife, fish, shellfish, marine mammals, other foods and timber resources as a direct result of this project. I have made this determination after careful review of the subsistence analysis and public input from subsistence users and the Alaska Department of Fish and Game. The Forest Plan addressed the long-term consequences on subsistence and concluded that there may be a significant possibility of a significant restriction to subsistence use of deer some time in the future due to the potential effects of projects implementing the Forest Plan on the abundance and distribution of deer, and on competition for deer. This

potential future possibility of a significant restriction exists under all alternatives considered in the Kuiu Timber Sale Area FEIS, including the no-action alternative.

Features of the Selected Alternative

The Selected Alternative (Alternative 5) was analyzed in the Kuiu Timber Sale Project Area FEIS.

The Selected Alternative includes the following features:

- The Selected Alternative harvests approximately 31.4 million board feet (mmbf) from approximately 1,208 acres. Only ground-based logging systems will be used. Logs will be transported to the existing log transfer facilities in either Saginaw or Rowan Bay. The facilities at Saginaw Bay would be reconstructed before use.
- The Selected Alternative only includes even-aged silvicultural systems. This meets the standards and guidelines for a Timber Production LUD. There are a number of supportive reasons for the use of this method in Alaska's western hemlock-Sitka spruce forests. These include excellent regeneration of desired species, effective dwarf mistletoe control, viable harvest economics and compatibility with the use of standard logging systems.
- The Selected Alternative harvests four percent of the existing productive old-growth forest in the project area and one percent in WAA 5012.
- The indicated bid is a negative $125.21/mbf to Rowan Bay LTF and a negative $110.37/mbf to Saginaw Bay LTF. About 124-176 direct jobs and $4.81-$6.62 million in direct income will be created. Actual bid values may vary at the time of sale offering due to more accurate timber cruise information and fluctuating market conditions.
- The Selected Alternative includes opening approximately 6.8 miles of existing National Forest System (NFS) Roads 6417, 6427, 46091, 46094, 6442, and 6443 and construction of 6.5 miles of NFS road and 3.5 miles of temporary road. All new and opened NFS roads will be placed into storage and all temporary roads will be decommissioned after timber harvest activities.
- Road construction and reconditioning will require installation of three culverts or bridges on Class I streams, five culverts or bridges on Class II streams, 15 culverts or bridges on Class III streams, and 19 culverts or bridges on Class IV streams. After timber harvest is complete, all temporary roads will be decommissioned, and all new NFS and reconditioned roads will be placed back into storage. Road closure may include any combination of tank traps at the beginning of the road and/or pulling some or all drainage structures, such as culverts, to address resource concerns.
- Additionally, 10.5 miles of existing open roads will also be placed into storage (2.8 miles of Road 6413, 3.6 miles of Road 46096, 1.1 mile of Road 6427, 1.4 mile of Road 46021 and 1.6 mile of Road 6418) after completion of timber harvest activities.

- Total road densities (including all existing NFS roads) will increase within the project area from 1.06 mi/mi^2 to 1.15 mi/mi^2. Total road density within the WAA would increase from 0.68 mi/mi^2 to 0.71 mi/mi^2. Open road density within the project area will decrease with the Selected Alternative from 0.78 mi/mi^2 to 0.63 mi/mi^2 and from 0.46 mi/mi^2 to 0.41 mi/mi^2 within WAA 5012 once timber harvest activities are completed.
- The Selected Alternative will increase cumulative harvest levels in all watersheds within the project area. Trends in 30-year cumulative harvest levels are declining due to the ongoing re-growth of trees harvested over a period of decades, and the lower levels of harvest in the 1970s and 1980s. The resulting trend is toward hydrologic recovery and improving condition in all project-area watersheds. If the Selected Alternative was implemented in 2008 (as assumed in the analysis), 30-year cumulative harvest levels in all watersheds would be less than 20 percent by 2010, and by 2025 cumulative harvest levels in all watersheds will be less than 10 percent.
- Harvest will occur in the North Kuiu Roadless Area. Approximately one percent (112 acres by harvest and two acres by road building) of the roadless area will be directly affected by the Selected Alternative. A total of 397 acres in the roadless area will be indirectly affected when the 600-foot zone of influence around harvest units and the 1,200-foot zone of influence around roads are applied. The one percent reduction (114 acres) of the North Kuiu Roadless Area is not expected to change the integrity of the area.
- The effects of the Selected Alternative on the subsistence resources are minimal. The direct, indirect, and cumulative effects for this project do not present a significant possibility of a significant restriction of subsistence resources.

Reasons for the Decision

In making this decision, I considered the issues and concerns raised during scoping and comments on the Draft EIS and have taken into account the competing interests and values of the public raised in comments on the Kuiu Timber Sale Area Draft EIS. There were many divergent public, personal and professional opinions expressed during the analysis process. The decision will most likely not completely satisfy any one particular group or individual. However, I considered all views and I believe the decision I have made is a balanced approach to implementing the Tongass Forest Plan.

1. I considered the trade-off between resource protection, social values, and timber sale economics. Alternative 5 provides a beneficial mix of resources for the public, within a framework of existing laws, regulations, policies, public needs and desires, and the capabilities of the land, while meeting the stated Purpose and Need for this project.
2. I considered the need to seek to provide a stable supply of timber from the Tongass National Forest, which meets the annual planning-cycle market demand, while managing these lands for sustained long-term yields,

consistent with sound multiple-use and sustained-yield objectives. The Selected Alternative provides about 31.4 mmbf toward meeting annual market demand. I also believe the Selected Alternative best meets the intent of the adaptive management strategy of the 2008 Forest Plan by utilizing the volume available in the Phase 1 suitable land base.

3. I considered the need to provide diverse opportunities for natural resource employment and to contribute to local and regional economics. The Selected Alternative estimates about 124 to 176 annualized direct jobs will be supported for timber industry employment opportunities. This range of jobs accounts for the variety of options the timber purchasers have under the limited interstate shipping policy. The purchasers may elect to process all the sawlogs locally or to ship up to 50 percent of the total sawlog volume and up to 100 percent of the total utility volume to markets outside Alaska, which may reduce support for sawmilling jobs. An estimated 31.4 mmbf of wood products will be harvested to support local and regional economics.

   The Selected Alternative may have a limited to no effect on other natural resource employment. During timber harvest activities, log truck traffic and other traffic associated with the timber sale would increase and could negatively affect the few outfitter/guides that currently use the road system. Also, the use by outfitter/guides of either LTF site during logging activities could be affected. The Selected Alternative will close an additional 10.5 miles of road currently open to motorized traffic. However, since road use on the island is very low, road closure is not expected to significantly affect the four black bear hunting outfitter and guides currently permitted to use the Kuiu road system.

4. I have considered the effects that the proposed harvest and associated road construction will have on deer habitat. According to the deer model predictions, a reduction of approximately one percent of the important deer winter range in the WAA could occur with the implementation of the selected alternative. These reductions in habitat are not expected to affect deer populations within WAA 5012. In fact, the high number of acres of important deer winter range remaining after implementation and the low hunting success on Kuiu (average 18 deer/year) indicate that the WAA could support more deer than are currently present and a reduction to habitat should not reduce deer populations. For these reasons, I believe the Selected Alternative will not significantly affect deer habitat.

5. I have carefully considered the needs of subsistence users in this decision, particularly of those people residing in Kake who use the Kuiu Project Area for subsistence resources and recreation. An ANILCA 810 Subsistence Hearing was held in Petersburg on March 16, 2006 and in Kake on March 21, 2006. Testimony from this hearing was considered in this decision and is recorded in the project planning record. The effects of the Selected Alternative on the subsistence resources are minimal. The direct, indirect and cumulative effects for this project do not present a significant possibility of a significant restriction on subsistence resources.

Additionally, the 2008 Forest Plan took into account Kake community use areas, including lands adjacent to the project area. These lands, used for both recreation and subsistence have been either given non-development land use designations or are reserved for Phase 2 and 3 of the adaptive management strategy implementation.

6. I considered the effects to North Kuiu Roadless Area values and the wilderness characteristics associated with Kuiu Island. The Selected Alternative affects four percent (397 acres) of the roadless area with the application of a 600-foot buffer around harvest units and 1,200-foot buffer around roads. Most of the roadless area will retain its values identified in the SEIS (2003). Opportunity for solitude will remain low and the opportunity for primitive recreation will remain moderate. The roadless area does not currently include any landscapes considered distinctive for the character type from a scenery perspective; this will not change with the implementation of the Selective Alternative.
7. I have considered the cumulative watershed effects and effects of past road construction in making my decision. I considered the declining trends in 30-year cumulative harvest levels due to the ongoing re-growth of trees harvested over a period of decades and the lower levels of harvest in the 1970s and 1980s, and the resulting trend toward hydrologic recovery and improving conditions in all project-area watersheds. I considered the impacts of road building and timber harvest on extreme hazard soils. The Selected Alternative avoids any road building on extreme or high hazard soils. Also, site specific soil stability investigations were conducted on identified extreme hazard soils within units. Fourteen acres (12 acres within the Security watershed and 2 acres within the unnamed watershed #109-45-10090) were determined to be stable in Unit 101. Partial suspension logging methods were prescribed to reduce impacts from sediment. I also considered the planned storage and decommissioning road activity that will result in reducing long-term risks of sedimentation and inhibited fish passage.
8. Comments were received expressing concerns over harvest units located in the Kadake Recreational River. I considered the scenic and recreational values of this area. I also considered the 2008 Forest Plan's decision to further protect recreation, subsistence and scenic values by designating the lands adjacent and near to Kadake Bay as non-development LUDs. The Selected Alternative responds to these concerns and avoids harvest in this LUD.
9. My decision to implement the Selected Alternative responds to road maintenance cost concerns by putting into storage all new NFS roads and decommissioning all temporary roads following timber harvest activities. Additionally, approximately 10.5 miles of currently open NFS roads will be placed into storage. Overall, implementation of this alternative will close more miles of NFS road than it builds.
10. Significant adverse effects to soils, wetlands or fisheries are not anticipated due to the locations of the roads and units and the implementation of Forest

Plan standards and guidelines, best management practices (BMPs), and conservation strategy.

11. This decision includes the use of the existing log transfer facilities (LTF) at either Rowan Bay and/or Saginaw Bay as permitted. These facilities are currently permitted for use by log barges as well as in-water rafts. The purchaser of the timber sale is required to submit a request to the State of Alaska for all applicable permits associated with either form of log transportation. All log transfer facility use will be monitored to ensure that bark accumulation remains within thresholds specified by the U.S. Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) permit and the State of Alaska.
12. In making my Kuiu project decision, I considered climate change and reviewed the analysis in the 2008 Forest Plan Amendment EIS. That forest-wide analysis discusses the risk of possible effects and the considerable uncertainty concerning specific predictions of how the climate may change, and even more uncertainty regarding the effects of climate change on the resources of the Tongass NF. In this context, climate change is not essential to a reasoned choice among the alternatives considered in the Kuiu project analysis. The Tongass National Forest will continue to monitor potential effects of climate change through the existing Forest Plan monitoring programs, and other studies that are happening regionally and nationally. Any need for a different course of action that might affect what I am deciding now, will be addressed through existing planning procedures to determine whether changes in the Kuiu project management are warranted.

Public Involvement

Public involvement has been instrumental in the identification and clarification of issues for this project. This has been helpful in the formulation of alternatives and has assisted me in making a more informed decision for the Kuiu Timber Sale project. Public meetings, Federal Register notices, newspaper and radio news releases, open houses, the Tongass National Forest Schedule of Proposed Actions, and group and individual meetings were used to solicit input for this project.

Schedule of Proposed Actions: The Kuiu Timber Sale project was first placed on the Spring 2004 Schedule of Proposed Actions.

Scoping Letters: In February of 2004, scoping letters were sent to everyone that requested to be on the project mailing list. The 28 comment letters that the Forest Service received in response to scoping covered a wide range of topics, including: wildlife/cumulative effects to wildlife, old-growth habitat, fisheries, recreation, tourism, socioeconomics, roadless areas, transportation and road management, timber harvest economics, water quality, fish habitat, forest management, subsistence resources, soils, and wetlands. Comments also provided support for the work done to prepare the Draft EIS and the range of alternatives included in the analysis.

Notice of Intent: A Notice of Intent (NOI) to prepare an Environmental Impact Statement was published in the Federal Register on August 18, 2004, and a revised NOI was published on September 14, 2004.

Open Houses: Three open houses were held in Petersburg on March 2, 2004, December 2, 2004, and June 20, 2005. Kake open houses occurred on June 3, 2004, and November 22, 2004.

Federally-recognized Tribal Governments: Consultation with federally recognized tribal governments included government-to-government and staff level communications. The Forest Service met with representatives of the Organized Village of Kake, and sent letters of consultation to the Petersburg Indian Association, SeaAlaska Corporation, Kake Tribal, and Tlingit/Haida Central Council.

Public Comment received for the Draft EIS: Availability of the Kuiu Timber Sale Area Draft EIS was announced in the Federal Register on February 3, 2006, with a due date for public comments listed as March 20, 2006. This document was available at public libraries and Forest Service offices throughout Southeast Alaska and copies were mailed to everyone who requested them. The Forest Service responses to the input received during the comment period are included in the Final EIS (Appendix D). The comments received covered several topics and ranged from general issues to detailed concerns about the analysis presented in the Draft EIS. The majority of detailed comments concerned road construction and timber harvest in North Kuiu and Security Creek Roadless Areas, the legality of the Forest Plan, cumulative effects on watersheds, concerns over harvest on high hazard (MMI-4) soils, and the desire to maintain a healthy deer population for subsistence purposes. Many comments expressed a preference for Alternative 1, the No-Action Alternative. There was also support for economic timber sales.

Subsistence Hearing: In accordance with Section 810 of the Alaska National Interest Lands Conservation Act, a subsistence hearing for the Kuiu Timber Sale Area was held in Petersburg, Alaska, on March 16, 2006, at the Petersburg City Council Chambers. The date, time, and location of the subsistence hearing were publicized in the local media. Three people testified at the hearing. A subsistence hearing was held in Kake, Alaska, at the OVK office on March 21, 2006. This hearing was delayed about a week due to weather conditions. The date, time, and location of this hearing were publicized in the local media and with flyers posted throughout town. One person testified at this hearing. The hearing transcripts are included in Appendix E of the Final EIS.

Analysis and Incorporation of Public Comments into the Final EIS: Public comments and subsistence comments were analyzed and incorporated into the Final EIS. For an analysis of public comment and the Forest Service response to public comment, see Appendix D of the Final EIS.

Final EIS: The Final EIS was filed with the Environmental Protection Agency and a Notice of Availability was published in the Federal Register on September 7, 2007. A public notice was also published in the newspaper of record, the *Juneau Empire*,

and in the local newspaper, the *Petersburg Pilot*, on September 13, 2007. No comments were received on the FEIS.

Record of Decision: The legal public notice of the 2008 Kuiu Timber Sale Area Record of Decision will be published in the current newspaper of record, *Ketchikan Daily News*, in Ketchikan, Alaska. Also as a courtesy, a notice will published in the *Juneau Empire* in Juneau, Alaska.

Coordination with Other Agencies

From the time scoping was initiated, meetings and site visits with all interested federal and State of Alaska agencies have occurred. Issues were discussed and information was exchanged.

An interagency team of biologist representing the U.S. Fish and Wildlife Service (USFWS), Alaska Department of Fish and Game (ADF&G), and the Forest Service reviewed small old-growth reserves (OGRs) for location and function on Kuiu Island. The team recommended changes to several OGRs including three OGRs in VCUs 398, 399, and 402 which were adopted by the 2008 Forest Plan Amendment.

The Alaska Coastal Management Plan (ACMP) consistency review process was initiated upon publication of the Draft EIS through the Alaska Department of Natural Resources, Office of Project Management and Permitting. The State concurs with the Forest Service determination that the Kuiu Timber Sale project is consistent with the ACMP and affected coastal district's enforceable policies to the maximum extent practicable.

A Biological Evaluation was prepared and sent to the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service as part of the Section 7 consultation process under the Endangered Species Act. The National Marine Fisheries Service concurred with the Forest Service determination that the project will not affect NMFS-managed threatened or endangered species. Consultation with the U.S. Fish and Wildlife Service concluded that no terrestrial threatened or endangered wildlife species are present in the project area.

Section 404 of the Clean Water Act (1977, as amended) requires a permit from the U.S. Army Corps of Engineers before filling or dredging in wetlands and tidelands. Permits have been obtained for the Saginaw and Rowan Bay Log Transfer Facilities.

The Final EIS (Chapters 1 and 4) identifies the agencies that were informed of and/or involved in the planning process.

Changes since the FEIS

2008 Forest Plan

The 2008 Forest Plan Amendment (using the 1982 planning regulations) was completed while the Kuiu project was being planned. The Forest Plan Amendment DEIS was released in January 2007 and the extended public comment period ended on April 30, 2007. The 2008 Forest Plan Amendment was completed with the

signing of the Record of Decision (ROD) on January 23, 2008, and was effective on March 17, 2008. The ROD for the 2008 Forest Plan Amendment adopts the Timber Sale Program Adaptive Management Strategy, under which portions of the suitable land base become available for project-level planning in three phases. The Kuiu project area is within the Phase 1 portion of the suitable land base, which allows planning to continue for this project and to implement it once the planning process is completed.

As stated in the 2008 Forest Plan Amendment ROD (USDA Forest Service 2008b, p. 68), "Because this was an amendment of the 1997 Plan, much of the management direction of the 1997 Plan is carried forward relatively unchanged into the amended Forest Plan. Therefore, many existing projects and ongoing actions that were consistent with the 1997 Plan will continue to be so with the amended Forest Plan." Many of the components of the 2008 amended Forest Plan were incorporated into the planning and analyses processes of the Kuiu Timber Sale Area project. For example, the Kuiu project is consistent with all Land Use Designations of the 2008 amended Forest Plan, including the Old-Growth Habitat and Special Interest Area LUDs. The 2008 Forest Plan Amendment ROD also contains transition language for timber sale projects, like Kuiu that were already being planned. This language identifies three different categories of projects, depending on how far along the projects are in the planning process. The Kuiu project is in Category 2, which requires me to review the project and incorporate the new direction in the amended Forest Plan to the extent this can be done without causing major disruptions in the implementation of the project.

Kuiu is one of the 36 projects in Category 2 that the Responsible Official reviewed and determined "are consistent with the goals and objectives of the amended Plan" (p. 69). The environmental effects of the Kuiu project have been disclosed to the public through site-specific project-level environmental documents. Kuiu and the other projects in Category 2 were also assumed to be implemented in the environmental analysis of Alternatives 5 and 6 in the 2008 Forest Plan Amendment Final EIS. "Because the Final EIS considered these projects in its effects analysis, their implementation is not in conflict with the amended Plan." (p.70)

The ROD for the 2008 Forest Plan directs me "to review these projects, and incorporate the new direction in the amended Forest Plan to the extent this can be done without causing major disruptions in the implementation of these projects." I directed the Kuiu IDT to review their resource analyses in terms of the 2008 Forest Plan. After review of the new Forest Plan's goals and objectives, standards and guidelines, and ROD direction, the specialists found that no changes needed to be made to the Kuiu analysis as disclosed in the FEIS.

In the 1997 Forest Plan, Kuiu Island was not considered a higher risk biogeographic province where high value marten habitat retention was required. The ROD for the 2008 Forest Plan highlights the legacy standard and guideline for goshawk foraging and marten habitat. The Kuiu project area lies within VCUs that do not require application of the Legacy Standard because they contain enough old-growth forest to provide habitat for old-growth associated species.

The ROD for the 2008 Forest Plan Amendment also states that Category 2 timber sale projects do not require changes to the scenery management program. The 2008 Forest Plan and 1997 Forest Plan programs are essentially the same in their environmental effects. Therefore, the analysis was not changed for the Kuiu project.

Timber Economics

In this decision, the latest NEAT_R model version 2.13 (February 20, 2008) was used to update the information for the alternatives. Alternatives 2, 3, and 5 are now comparative in value. All alternatives have improved slightly in value. This version also shows the range of jobs to account for the sawmilling jobs that may be affected by any volume involved in interstate shipping or overseas export.

Cumulative Watershed Effects

Additional analysis of 30-year cumulative harvest levels was completed. This entailed considering all existing and proposed road clearing acres, all harvest acres previously cleared but not implemented, and assuming a 2008 implementation date. The FEIS Chapter 3 watershed recovery values did not consider road clearing acres or the harvest acres previously cleared but not implemented. The additional analysis considers all road clearings and the Crane and Rowan unharvested units. The effect was to increase overall percentage of cumulative harvest within the watersheds (e.g. “less than 20 percent by 2010”). However, all watersheds remain under 20 percent cumulative harvest by 2010 as disclosed in the FEIS.

Invasive Plant Species

On October 19, 2007, the Tongass National Forest implemented a supplement to the Forest Service Manual 2080 concerning invasive plan species (Supplement No.: R10 TNF-2000-2007-1).

An invasive species risk assessment has been completed for the Kuiu project and is located in the project record on the Petersburg Ranger District. The assessment found the overall risk of high priority invasive plant establishment as a result of the project is low to moderate. The following design elements will be used to address and moderately reduce the risk of spreading invasive species in the Kuiu project area.

1) Require contractors to access rock material that is free of any perennial sowthistle, bull thistle, or any other tier one high priority species found from existing quarries prior to constructing new roads.

    a) This will require an invasive species specialist to inventory all rock source prior to use and certify in writing that it is acceptable.

b) If any rock sources are contaminated with tier one high priority species and certification can not be attained without treatment methods, consider the use of contaminated rock for re-constructing existing roads only.

c) Rock material free from tier one high priority invasive species will be required of all new road construction and new landings.

2) Eradicate or manually control any newly introduced high priority invasive plan species/populations not currently in the project area after project completion, and prior to closing new NFS or temporary roads.

3) Where feasible, avoid road reconstruction activities when high priority invasive plants are in flowering or seed stage (generally July-September). This could be achieved by pulling the plants or clipping the seed heads prior to road reconstruction activities.

4) Where feasible, avoid road ditch maintenance or other road maintenance activities when high priority invasive plants are in flowering or seed stage (generally July-September). This could be achieved by pulling the plants or clipping the seed heads prior to road reconstruction activities.

Unit Cards

The response to potential 100-acre unit opening concerns has also changed to indicate that if in layout a unit is over 100 acres, analysis will be completed in accordance with Forest Plan direction (p. 4-72) before implementation.

Errata

Wildlife: In reviewing the FEIS wildlife analysis for productive old-growth (POG) and high volume/low elevation POG in the WAA, inconsistencies were found in Tables 3-12 and 3-13 (pp. 3-26 and 3-27) and errors were carried throughout the table. Corrections were made to this table and are found in the Appendix 2, Errata to the FEIS. The conclusions of the effects analysis a did not change with these corrections.

Table 3-13 used two definitions of POG; one calculated using Class 6 and 7 (low elevation), the other using high, medium and low (low elevation) volume strata. The table then compares these “mixed” numbers. Also, while the table labels the acres as high volume below 800 feet, it became clear in review that the numbers were representing high, medium and low volume strata. The numbers in Table 3-13 have been rerun to all reflect low elevation high volume strata. The conclusions of the effects analysis did not change with these corrections.

Watershed Cumulative Effects: Labels on Chart 3-1 and Chart 3-2 on pages 84-84 of Chapter 3 in the FEIS were corrected to state that the figures do not account for timber harvest that has been approved under the Crane and Rowan Mountain Timber Sale or road clearings. Previous labels erroneously stated that calculations included acres approved under the Crane and Rowan Timber Sales. The effect is negligible. The intent of both figures is to visually display the rapid decline in 30-year

cumulative harvest levels among project-area watersheds, and how the trend is only minimally affected if Alternative 4 proposed timber harvest occurred.

Also, timber harvest summary tables in the direct and indirect effects for alternative comparisons were clarified by adding a footnote to each table stating values represent a 2007 implementation date (values in table were assumed to be additive and were applied to 2007 "base" levels).

Wetlands: While temporary roads built on wetlands were reported in the FEIS, the miles of new NFS road on wetlands were not. The Errata adds this information to Table 3-66 and Table 2-2. The additional 0.1-0.8 miles of new road through wetlands does not change the overall analysis. This addition is not expected to impair wetland functions for any alternative. Cumulatively, effects to wetlands resulting from this project and reasonably foreseeable projects are still expected to be minor.

Unit Cards and Unit Card Maps: Wording on the some of the unit cards changed to clarify concerns and responses. Also, some of the FEIS unit card maps contained symbols in the legend which were not depicted accurately on the actual unit maps in Appendix B; however, unit card narratives and FEIS discussions were accurate in the classification of roads. The coding for these maps has been corrected for the Selected Alternative unit card maps in Appendix 1.

Alternatives Considered in Detail

The No-Action Alternative (Alternative 1), Proposed Action (Alternative 4) and three other action alternatives were considered in detail in the Kuiu Timber Sale Area Final EIS. Each alternative is consistent with the 2008 Forest Plan Amendment. For a comparison of these alternatives and the Selected Alternative, refer to the Table R-2.

Alternative 1 – This alternative proposes no timber harvest, road construction, changes to road management objectives or other activities within the Kuiu Timber Sale Area at this time. It represents the existing condition of the Kuiu Timber Sale Area, and does not preclude future timber harvest or other activities from this area.

Actions common to all action alternatives
Logs would be transported to existing log transfer facilities (LTFs) in either Saginaw Bay or Rowan Bay. The Saginaw Bay LTF would require reconstruction before use.

Alternative 2 – This alternative was developed to minimize impacts to wildlife and watersheds, and to have no direct impact to roadless areas. The proposed timber harvest would result in the production of approximately 9.6 million board feet (mmbf) of timber from approximately 477 acres using ground-based logging systems. Alternative 2 includes clearcutting (even-aged management), single-tree selection (uneven-aged), group selection (uneven-aged) and clearcut with reserves (two-aged) harvest methods. Where high wildlife values are identified, approximately 50 percent of the stand basal area would be retained to provide cover and structure for wildlife habitat. Harvest units in the Recreational River LUD would retain 50 percent of the stand basal area to retain scenic values.

Approximately 1.8 miles of NFS road and 1.5 miles of temporary road construction would be necessary for timber harvest. Road construction and reconstruction would require the replacement of three Class I, three Class II, one Class III and five Class IV stream crossings in this alternative.

Alternative 3 – This alternative was developed by modifying Alternatives 2 and 4 to reduce impacts to resources such as wildlife, hydrology, and fisheries while providing a larger economic return. The proposed timber harvest would result in the production of approximately 15.9 million board feet (mmbf) of timber from approximately 786 acres. Only ground-based logging systems would be used. Alternative 3 includes clearcutting (even-aged management), single-tree selection (uneven-aged), group selection (uneven-aged) and clearcut with reserves (two-aged) harvest methods. Where high wildlife values are identified, approximately 50 percent of the stand basal area would be retained to provide cover and structure for wildlife habitat.

Approximately 5.4 miles of NFS road and 2.1 miles of temporary road construction would be necessary for timber harvest. Road construction and reconstruction would require the replacement of two Class I, four Class II, eight Class III, and 19 Class IV stream crossings.

Alternative 4 – Proposed/Preferred Alternative – The Proposed Action for the Kuiu Timber Sale would result in the production of approximately 33.3 million board feet (mmbf) of timber from approximately 1,387 acres. The Selected Alternative includes clearcutting (even-aged management), single-tree selection (uneven-aged), group selection (uneven-aged) and clearcut with reserves (two-aged) harvest methods.

A mix of ground-based and helicopter logging systems would be used. Helicopter logging would be used to access units on steeper ground. Helicopter use reduces the need for road construction and allows a more selective harvest on steeper slopes.

In some units, where high wildlife values are identified, approximately 50 percent of the stand basal area would be retained to provide cover and structure for wildlife habitat. Harvest units in the Recreational River LUD would retain 50 percent of the stand basal area to retain scenic values.

Approximately 6.5 miles of NFS road and 3.9 miles of temporary road construction would be necessary for timber harvest. Road construction and reconstruction would require the installation of stream crossing structures on three Class I, five Class II, 14 Class III, and 21 Class IV streams.

Alternative 5 – This alternative proposes only even-aged management with clearcut harvesting of timber to increase the economic return. The proposed timber harvest would result in the production of approximately 31.4 million board feet (mmbf) of timber from approximately 1,208 acres. Only ground-based logging systems would be used.

Approximately 6.5 miles of NFS road and 3.5 miles of temporary road construction would be necessary for timber harvest. Road construction and reconstruction would

require the installation of crossing structures on three Class I, five Class II, 15 Class III, and 19 Class IV stream crossings.

Table R-1. Proposed activities by alternative for the Kuiu Timber Sale Area

Proposed Activity		Alternative				
		1	2	3	4	5
Acres of Timber Harvested by Treatment						
Even-aged Management	Clearcut	0	197	409	1,025	1,208
Uneven-aged Management	Single tree selection - 50% basal area retention	0	87	72	193	0
	Group selection - 50% basal area retention	0	19	19	41	0
Two-aged Management	Clearcut with reserves - 50% area retention	0	175	286	128	0
Total Acres		**0**	**478**	**786**	**1,387**	**1,208**
Acres of timber harvest by logging system						
Cable		0	395	751	1,092	1,059
Shovel		0	83	35	147	149
Helicopter		0	0	0	148	0
Miles of road maintenance/reconditioning/construction						
Maintenance: miles of open NFS roads after harvest		56.2	48.0	47.8	45.2	45.2
Reconditioned: existing NFS roads (closed after harvest)		0	4.1	3.0	6.1	6.8
New Construction: NFS road (closed after harvest)		0	1.8	5.4	6.5	6.5
New Construction: temporary roads (decommissioned after harvest)		0	1.5	2.1	3.9	3.5
Miles of road closure						
NFS Roads (Maintenance Level 2 or above)		0	7.8	8.0	10.5	10.5

Reasons for Not Selecting Other Alternatives

I did not select Alternative 1 because environmental analysis showed the desirable outputs of the Purpose and Need could be achieved without unreasonable effects to the ecological and human environments. These effects are described under the reasons for this decision and in Chapter 3 of the FEIS.

I did not select Alternative 2 because additional timber could be supplied and additional jobs supported in the local economy through the Selected Alternative without substantial additional environmental impact. I considered the public comments to the DEIS concerning impacts to the Kadake Recreational River; Alternative 2 contains harvest units within this LUD. I also did not select this alternative because it falls short of adequately utilizing the available land base identified in Phase 1 of the adaptive management strategy of the 2008 Forest Plan. Alternative 2 offers the lowest volume of the action alternatives.

I did not select Alternative 3 because it has the highest logging costs for the second lowest amount of volume. Higher volume at lower logging costs can be supplied and additional jobs supported in the local economy through the Selected Alternative without substantial additional environmental impact. This alternative also falls short of adequately utilizing the available land base identified in Phase 1 of the adaptive management strategy of the 2008 Forest Plan.

I did not select Alternative 4 because I considered the public comments to the DEIS concerning impacts to the Kadake Recreational River; Alternative 4 contains the most proposed harvest within this LUD. I also considered impacts to Roadless; Alternative 4 directly and indirectly affects the most acres of North Kuiu Roadless Area.

Alternative 5 was selected.

Table R-2. Comparison of alternatives by issue and effects

Units of Measure	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
Issue 1 – Roadless Areas					
Acres harvested within Inventoried Roadless Area (IRA)	0	0	67	207	114
Miles of NFS roads constructed within IRA	0	0	0.06	0.33	0.33
Miles of temporary roads constructed within IRA	0	0	0.12	0.13	0.13
Percent of affected IRA including zones of influence (600’ for harvest, 1,200’ for roads)	0	0	3%	6%	4%
Change in IRA roadless characteristics?	No	No	No	No	No
IRA still eligible for Wilderness designation?	Yes	Yes	Yes	Yes	Yes
Acres harvested within unroaded areas	0	0	68	167	167
Miles of NFS roads constructed in unroaded areas	0	0	0.55	0.55	0.55
Miles of temporary roads constructed within unroaded areas	0	0	0.09	0.3	0.3
Issue 2 – Deer Habitat and Subsistence Use					
Acres of POG maintained within the WAA	90,856	90,378	90,070	89,469	89,648
Acres of important deer winter range (HSI = 0.60 – 1.0) remaining after harvest in WAA 5012	21,971	21,843	21,841	21,660	21,725

Table R-2. Comparison of alternatives by issue and effects (continued)

Units of Measure	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
Issue 2 – Deer Habitat and Subsistence Use (continued)					
Subsistence	Implementations of any action alternative for this project, in combination with past and reasonably foreseeable future timber harvest, will not likely result in a significant restriction on subsistence use of resources. However the Forest Plan predicts that by completing the harvest schedules at the end of the rotation (2095) there may be possible future restrictions for subsistence hunting for deer.				
Issue 3 – Timber Harvest Economics					
Amount of volume (mbf)	0	9,617	15,859	33,300	31,354
Indicated bid ($/mbf) to Rowan Bay LTF	0	($124.99)	($152.73)	($126.74)	($125.21)
Indicated bid ($/mbf) to Saginaw Bay LTF	0	($108.02)	($135.99)	($111.87)	($110.37)
Total Logging Costs per mbf (including road costs) to Rowan Bay LTF	0	$364	$390	$365	$360
Total Logging Costs per mbf (including road costs) to Saginaw Bay LTF	0	$347	$373	$350	$345
Road costs per mbf (construction and reconstruction) to Rowan Bay LTF	0	$59.94	$79.52	$49.28	$54.09
Road costs per mbf (construction and reconstruction) to Saginaw Bay LTF	0	$59.94	$79.52	$49.28	$54.09
Direct Employment (job years)	0	38-54	63-89	132-187	124-176
Total Direct Income (millions)	0	$1.47-$2.03	$2.43-$3.35	$5.11-$7.03	$4.81-$6.62
Issue 4 – Cumulative Watershed Harvest Since 1977 (assumes 2007 implementation)					
Acres of extreme risk hazard (MMI-4) soils in units	0	0	0	14	18
Cumulative timber harvest acres - % of Dean Creek Watershed (WS)	24.0	24.0	24.0	26.7	26.7

Table R-2. Comparison of alternatives by issue and effects (continued)

Units of Measure	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
Cumulative timber harvest acres - % of Saginaw Creek Watershed (WS)	8.2	9.4	12.4	13.3	12.2
Cumulative timber harvest acres - % of WS #109-45-10090	18.8	19.9	18.8	23.4	23.4
Cumulative timber harvest acres - % of WS #109-44-10370	8.3	10.8	10.6	10.8	10.8
Cumulative timber harvest acres - % of Security Creek	22.5	23.3	24.4	25.2	25.2
Cumulative timber harvest acres - % of Rowan Creek Watershed	8.0	9.0	8.8	9.8	10.0
Cumulative timber harvest acres - % of Kadake Creek Watershed	17.3	17.7	17.8	18.2	17.9
Other Environmental Considerations					
Effects on TES Species	Activities may impact individual goshawks but would not result in a trend toward listing. No effect for other species.				
Effects on Wildlife					
Project Area open road density (mi/mi^2)	0.78	0.67	0.66	0.63	0.63
WAA 5012 open road density (mi/mi^2)	0.46	0.42	0.42	0.41	0.41
Acres of high value marten habitat (HSI > 0.89) after harvest in WAA 5012	51,614	51,211	50,984	50,438	50,676
Acres of coarse canopy old-growth that would remain after harvest in the WAA	22,956	22,738	22,629	22,172	22,415
Acres low elevation / high value wildlife (POG below 800 feet) that would remain after harvest in the WAA	11,162	11,061	11,080	10,903	11,006
Effects on Water Quality					
Number of Class I stream crossings on closed roads and proposed roads	0	3	2	3	3

Table R-2. Comparison of alternatives by issue and effects (continued)

Units of Measure	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
Number of Class II stream crossings on closed roads and proposed roads	0	3	4	5	5
Number of Class III stream crossings on closed roads and proposed roads	0	1	8	14	15
Number of Class IV stream crossings on closed roads and proposed roads	0	5	19	19	19
Miles of temporary road construction	0	1.5	2.1	3.9	3.5
Miles of currently open roads placed in storage (structures removed and roads waterbarred)	0	7.8	8.0	10.5	10.5
Effects on Wetlands					
Miles of temporary road on wetlands	0	0.1	0.1	0.6	0.6
Miles of system road on wetlands	0	0.1	0.8	0.7	0.8
Effects on Recreation	None				
Effects on Scenery					
Acres harvested in Recreational River LUD	0	18	0	49	0
Effects on Heritage Resources	None				
Effects on Land Status	None				

Environmentally Preferred Alternative

Implementation of Alternative 1, the No-action Alternative, would result in no environmental disturbance and is therefore the environmentally preferred alternative. This is based on the comparison of all the alternatives shown in Table R-2.

All alternatives considered in detail have varying levels of environmental effects depending upon the emphasis of the alternative. Alternative 2 is the most environmentally preferred of the action alternatives. It would cause the least adverse environmental effects because it proposed the least miles of total road construction

(3.3 miles), harvests the least acres of timber (477 acres) of which 58 percent is partial harvest, and harvests the least acres of coarse canopy old-growth (218 acres).

Alternatives Not Considered in Detail

In addition to the alternatives described above, several other alternatives were considered during the analysis but eliminated from detailed study. These alternatives were discussed during the development of the alternatives. Some of them were suggested by comments received through public scoping. Some of the aspects of the ideas were modified and used in conjunction with the alternatives considered in detail. Other alternatives would not meet Forest Plan direction for this project. A summary of these, and the reasons they were not analyzed in detail, can be found in Chapter 2 of the Final EIS. Further information is available in the project planning record.

Project Record

The planning record for this project includes the Kuiu Draft EIS, the Kuiu Final EIS, the Kuiu Record of Decision, material incorporated by reference, and all materials produced during the environmental analysis of this project. The planning record is available for review at the Petersburg Ranger District.

Mitigation

Mitigation measures are prescribed to avoid, reduce, minimize or eliminate the adverse effects of proposed actions. These measures were applied in the development of the project alternatives, including the Selected Alternative, and in the design of the harvest units and road corridors. The “Mitigation Measures” section of Chapter 2 and Appendix B of the Final EIS discuss mitigation measures for all alternatives. An invasive plant species risk assessment was completed as part of the review before issuance of this ROD. Mitigation measures adopted as part of this decision are located in the Invasive Plant Species section under Changes since the FEIS in this ROD.

Mitigation measures applicable to the Selected Alternative include measures contained in the standards and guidelines of the 2008 Forest Plan Amendment, and applicable Forest Service manuals and handbooks. Appendix 1 of this ROD describes site-specific mitigation measures for the Selected Alternative. These measures are adopted as part of this decision and will be implemented.

Monitoring

Monitoring is the process used by the Forest Service to evaluate whether the resource management objectives of the final environmental documents have been implemented as specified and whether the steps identified for mitigating the environmental effects were effective.

Project-level monitoring is specified in Chapter 2 of the Final EIS and will include monitoring for all best management practices and monitoring associated with the heritage resources site sensitivity model (FEIS, p. 2-18), monitoring bald eagle nest activity at Rowan Bay LTF, regeneration surveys, and bark accumulation monitoring at Rowan and/or Saginaw Bay LTFs. These monitoring items are part of this decision and will be implemented. The Petersburg District Ranger is responsible for ensuring that project implementation, mitigation, monitoring, and enforcement are accomplished as specified in the Final EIS.

Findings Required By Law

National Forest Management Act

The National Forest Management Act (NFMA) requires specific determinations in this ROD: consistency with existing Forest Plans and Forest Service Manual (FSM) 2410.3, R10 Supplement 2400-2002-1 (5/7/2002), a determination of clearcutting as the optimal method of harvesting, if used, and specific authorizations to create openings over 100 acres in size. No even-aged management harvest units in the Selected Alternative will result in openings greater than 100 acres. Specific information and rationale used to develop unit prescriptions are shown on the unit cards in Appendix 1 of this ROD, in Chapter 3 of the Final EIS, and in the planning record.

Clearcutting as the Optimal Method of Harvesting

The Forest Plan (p. 4-71 to 4-72) gives guidance on when to use even-aged management. Clearcutting (an even-aged method) is used in this project to preclude or minimize the occurrence of potentially adverse impacts from logging system damage and windthrow. Specific information and rationale for use of this prescription is shown in the introduction to the unit cards and in the silvicultural prescriptions on the individual unit cards (Appendix 1 of this ROD), and in Chapter 3 of the Final EIS. Where used, this prescription has been deemed optimal related to site-specific considerations as described above.

Tongass Land and Resource Management Plan

This decision fully complies with the 2008 Tongass Land and Resource Management Plan. I have reviewed the management direction, standards and guidelines, and the schedule of activities for the project area included in the Selected Alternative, and find the Selected Alternative to be consistent with these elements. The activities authorized in this decision are consistent with the standards and guidelines and management prescriptions of the Forest Plan.

Forest Service Transportation Final Administrative Policy (Roads Rule)

The Kuiu Timber Sale Area Final EIS and this ROD have been prepared to be consistent with the Forest Service Transportation Final Administrative Policy, and the *Tongass National Forest Forest-Level Road Analysis* (January 2003). I have determined that the roads and road management associated with the Selected

Alternative constitute the minimum road system needed for safe and efficient travel and for the administration, utilization, and protection of National Forest System lands.

Tongass Timber Reform Act

Forest Plan Riparian Standards and Guidelines have been applied to the Kuiu Timber Sale project, and no commercial timber harvest will occur within 100 feet of any Class I stream or any Class II stream flowing directly into a Class I stream, as required in Section 103 of the Tongass Timber Reform Act (TTRA). The design and implementation direction for the Selected Alternative incorporates best management practices and Forest Plan standards and guidelines for the protection of all stream classes.

Endangered Species Act

Actions authorized in the Selected Alternative are not anticipated to have a direct, indirect, or cumulative effect on any threatened or endangered in or near the Kuiu Timber Sale Project Area. The National Marine Fisheries Service has concurred that the actions described for the proposed project are not likely to adversely affect any threatened or endangered marine species. The U.S. Fish and Wildlife Service has concurred that no terrestrial threatened or endangered species are known to occur in the Kuiu Timber Sale Area.

A complete Biological Evaluation for marine and terrestrial threatened, endangered and sensitive species is included in the project record for this project.

Bald Eagle Protection Act

This project complies with the Bald Eagle Protection Act. Bald eagle habitat will be managed in accordance with the Interagency Agreement established with the USFWS. Monitoring the nest at the Rowan Bay LTF will ensure the Selected Alternative will not have a significant direct, indirect, or cumulative effect on that nest and the there is no anticipated significant direct, indirect, or cumulative effect on any other bald eagle habitat. If other nests are identified in or around the project activities, protective measures will be applied.

Magnuson-Stevens Fishery Conservation and Management Act (Essential Fish Habitat)

Section 305 (b)(2) of the Magnuson-Stevenson Fishery Conservation and Management Act states that all Federal agencies must consult the National Oceanic and Atmospheric Administration’s National Marine Fisheries Service (NMFS) for actions or proposed actions that may adversely affect essential fish habitat (EFH). The Act promotes the protection of EFH through review, assessment, and mitigation of activities that may adversely affect these habitats.

The potential effects of the project on EFH have been evaluated. For specific information regarding EFH and the potential effects refer to the Kuiu Timber Sale Fisheries Resource Report in the planning record. Analysis completed in the cumulative effects sections for fisheries, soils, and water indicate no significant

changes to Riparian Management Areas (RMAs) resulting from proposed management activities.

The Forest Service determined that Kuiu Timber Sale may adversely affect the EFH. However, by implementing Forest Plan Standards and Guidelines and Best Management Practices, effects to EFH would be minimized. Concurrence on the EFH finding was received from NMFS and formal EFH consultation has been completed in accordance with the agreement between the Forest Service and NMFS.

National Historic Preservation Act

Heritage resource surveys of various intensities have been conducted in the project area following inventory protocols approved by the Alaska State Historic Preservation Officer. The State Historic Preservation Officer has been consulted, in accordance with Section 106 of the National Historic Preservation Act (NHPA) and 36 CFR Part 800. I have determined that there will be no effects on known heritage resources. Native communities have been contacted and public comment encouraged. The Forest Service has satisfied the consultation process with the State Historic Preservation Officer. Forest Service timber sale contracts contain enforceable measures for protecting any undiscovered heritage resource that might be encountered during sale operations. See discussion under Heritage Resources in Chapter 3 of the Final EIS.

Federal Cave Resource Protection Act of 1988

Forest Plan Karst and Caves Standards and Guidelines are applied to areas known or suspected to contain karst resources. Within the Kuiu Timber Sale Area there are 6,624 acres of carbonate bedrock and 2,270 acres of karst. No proposed timber harvest, road construction, or quarry development will occur on these areas or along the drainages which flow into them. There is no effect to significant karst resources.

Alaska National Interest Lands Conservation Act Section 810, Subsistence Evaluation and Findings

The Forest Plan addressed the long-term consequences on subsistence Tongass-wide and concluded that there may be a significant restriction to subsistence use of deer some time in the future due to the potential effects of projects fully implementing the Forest Plan on the abundance and distribution of deer and on competition for deer.

An Alaska National Interest Lands Conservation Act (ANILCA) Section 810 subsistence evaluation was conducted for the alternatives considered in detail. A summary of this evaluation is included in Chapter 3 of the Final EIS. A subsistence hearing was held in Petersburg on March 16, 2006 and in Kake on March 21, 2006 to collect public input on subsistence users in the project area. A transcript of the testimony is included in Appendix E of the Final EIS.

This evaluation indicates that the potential foreseeable effects from the alternatives in the Kuiu Timber Sale area and WAA 5012 will not have a significant possibility of a significant restriction of subsistence uses for deer, bear, furbearers, marine

mammals, waterfowl, salmon, other finfish, shellfish, and other foods such as berries and roots. See Chapter 3, Wildlife Habitat and Subsistence Uses, in the Final FEIS.

Clean Water Act (1977, as amended)

Congress intended the Clean Water Act of 1972 (Public Law 92-500), as amended in 1977 (Public Law 95-217) and 1987 (Public Law 100-4), to protect and improve the quality of water resources and maintain their beneficial uses. Section 313 of the Clean Water Act and Executive Order 12088 of January 23, 1987 address Federal agency compliance and consistency with water pollution control mandates. Agencies must be consistent with requirements that apply to "any governmental entity" or private person. Compliance is to be in line with "all Federal, State, interstate, and local requirements, administrative authority, and process and sanctions respecting the control and abatement of water pollution."

The Clean Water Act (Sections 208 and 319) recognized the need for control strategies for nonpoint source pollution. The National Nonpoint Source Policy (December 12, 1984), the Forest Service Nonpoint Strategy (January 29, 1985), and the USDA Nonpoint Source Water Quality Policy (December 5, 1986) provide a protection and improvement emphasis for soil and water resources and water-related beneficial uses. Soil and water conservation practices (BMPs) were recognized as the primary control mechanisms for nonpoint source pollution on National Forest System lands. EPA supports this perspective in their guidance, Nonpoint Source Controls and Water Quality Standards (August 19, 1987).

The Forest Service must apply BMPs that are consistent with the Alaska Forest Resources and Practices Regulations to achieve Alaska Water Quality Standards. The site-specific application of BMPs, with a monitoring and feedback mechanism, is the approved strategy for controlling nonpoint source pollution as defined by Alaska's Nonpoint Source Pollution Control Strategy (October 2000). In 1997, the State approved the BMPs in the Forest Service's Soil and Water Conservation Handbook (FSH Handbook 2509.22, October 1996) as consistent with the Alaska Forest Resources and Practices Regulations. This Handbook is incorporated into the Tongass Land and Resource Management Plan.

A discharge of dredge or fill material from normal silviculture activities, such as harvesting for the production of forest products, is exempt from Section 404 permitting requirements in waters of the United States, including wetlands (404(f)(1)(A). Forest roads qualify for this exemption only if they are constructed and maintained in accordance with best management practices to ensure that flow and circulation patterns and chemical and biological characteristics of the waters are not impaired (404)(f)(1)(E). The BMPs that must be followed are specified in 33 CFR 323.4(a). These specific BMPs have been incorporated into the Forest Service's Soil and Water Conservation Handbook under BMP 12.5. All roads that will be constructed for this project qualify for this exemption.

The design of harvest units for the Selected Alternative was guided by standards, guidelines, and direction contained in the Forest Plan, and applicable Forest Service Manuals and Handbooks. The unit cards and road cards (Appendix 1 of the ROD) contain specific details on practices prescribed to prevent or reduce nonpoint

sediment sources. Monitoring and evaluation of the implementation and effectiveness of Forest Plan Standards and Guidelines and BMPs will occur. Project activities are expected to meet all applicable State of Alaska Water Quality Standards Regulations.

Clean Air Act

Emissions anticipated from the implementation of any project alternative will be of short duration and are not expected to exceed State of Alaska ambient air quality standards (18 Alaska Administrative Code [AAC] 50).

Coastal Zone Management Act

The Coastal Zone Management Act of 1972 (CZMA), while specifically excluding federal lands from the coastal zone, requires that a federal agency's activities be consistent with the enforceable standards of a state's coastal management program to the maximum extent practicable when the agency's activities affect the coastal zone.

I have determined that the Selected Alternative provides no less resource protection than is provided by the standards contained in the Alaska Forest Resources and Practices Act (AFRPA) that apply on State lands. Accordingly, the Selected Alternative is consistent, to the maximum extent practicable, with the enforceable policies of the Alaska Coastal Management Plan (ACMP), as outlined in the AFRPA.

Based on the analysis in the FEIS, review of the Forest Practices Act, and comments from State agencies on the Draft EIS, the Forest Service determined that the project is consistency to the maximum extent practicable with the enforceable policies of the Alaska Coastal Management Program. The State concurred with this consistency finding on April 26, 2006.

The Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918 (amended in 1936 and 1972) prohibits the taking of migratory birds, unless authorized by the Secretary of Interior. The law provides the primary mechanism to regulate waterfowl hunting seasons and bag limits, but its scope is not limited to waterfowl. Over 100 species of birds migrate from the other states and countries to Alaska to breed, nest, and fledge their young. Most of these birds fly to interior or northern Alaska, and only pass through the project area on the way to their breeding grounds. The migratory species that may stay in the area utilize most, if not all, of the habitats described in the analysis for breeding, nesting, and raising their young. The effects on these habitats were analyzed for this project.

The Selected Alternative is not anticipated to have a significant direct, indirect, or cumulative effect on any migratory bird species for this project area. There may be minor direct effects on individuals or small groups and their nests from the harvest of timber or from the disturbance caused by other harvest activities.

Executive Orders

Executive Order 11988 (Floodplains)

Executive Order 11988 directs federal agencies to take action to avoid, to the extent practicable, the long- and short-term adverse impacts associated with the occupancy and modification of floodplains. Effects on floodplains from project activities have been avoided or minimized as much as possible.

Executive Order 11990 (Wetlands)

Executive Order 11990 requires federal agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with the destruction or modification of wetlands. This project avoids impacting wetlands whenever practicable, but it is not feasible to avoid all wetland areas. Approximately 2.7 miles of temporary road will be constructed on wetlands. Wetland soils not meeting Forest Plan criteria for timber harvest suitability are excluded from the harvest base. Soil moisture regimes and vegetation on some wetlands may be altered in some harvest units; however, the affected wetlands will meet wetland classification and will still function as wetlands in the ecosystem.

Road construction across wetlands is permitted within Alaska. Such construction requires the filling-in of wetlands and creates permanent loss of wetland habitat. Effects to wetlands are minimized through the application of specific BMPs. Road construction through wetlands is avoided where possible. See Chapter 3, Wetlands, of the Final EIS for more extensive discussion of the wetlands.

Executive Order 12898 (Environmental Justice)

Executive Order 12898 directs federal agencies to identify and address the issue of environmental justice, i.e., human health and environmental effects of agency programs that disproportionately impact minority and low-income populations. The Executive Order specifically directs agencies to consider patterns of subsistence hunting and fishing when an agency action may affect fish or wildlife. Implementation of the Selected Alternative will not cause disproportionate adverse health, social or environmental effects to minority or low-income populations adjacent to the Kuiu Timber Sale Project Area.

Executive Order 12962 (Recreational Fisheries)

Executive Order 12962 requires federal agencies to evaluate the effects of proposed activities on aquatic systems and recreational fisheries. With the application of Forest Plan Standards and Guidelines, including those for riparian areas, no significant adverse effects to freshwater or marine resources will occur. Aquatic systems would remain essentially the same because aquatic habitats are protected through implementation of BMPs and riparian buffers.

Executive Order 13007 (Indian Sacred Sites)

Executive Order 13007, directs federal agencies to accommodate access to and ceremonial use of American Indian sacred sites by Indian religious practitioners and

to avoid adversely affecting the physical integrity of such sacred sites. There are no known sacred Indian sites in the Kuiu Timber Sale Project Area. Consultation with local federally recognized tribes including the Organized Village of Kake, Petersburg Indian Association, and Tlingit/Haida Central Council, and SeaAlaska Corporation occurred during the analysis of this project.

Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments)

Executive Order 13175 directs Federal agencies to respect tribal self-government, sovereignty, and tribal rights, and to engage in regular and meaningful government-to-government consultation with tribes on proposed actions with tribal implications. The Forest Service met with or contacted local tribes during the planning stages of the project as previously noted in Public Involvement.

Executive Order 13443 (Facilitation of Hunting Heritage and Wildlife Conservation)

Executive Order 13443 directs Federal agencies to facilitate the expansion and enhancement of hunting opportunities and the management of game species and their habitat. The analysis considered and disclosed the effects to hunting activities. The Selected Alternative will maintain hunting opportunities by adhering to the 2008 Forest Plan standards and guidelines that maintain habitat for hunted species in the Kuiu Timber Sale area.

Federal and State Permits

Federal and state permits necessary to implement the authorized activities are listed in Chapter 1 of the Final EIS.

Implementation Process

Implementation of any part of this decision may occur no sooner than 50 days following publication of the legal notice of the decision in the *Ketchikan Daily News*, published in Ketchikan, Alaska.

This project will be implemented in accordance with Forest Service Manual (FSM) and Handbook (FSH) direction for Timber Sale Project Implementation in FSM 2431.3 and FSH 2409.18. This direction provides a bridge between project planning and implementation and will ensure execution of the actions, environmental standards, mitigation approved by this decision, and compliance with TTRA and other laws. All applicable best management practices (BMPs) will be applied to the Selected Alternative.

Implementation of all activities authorized by this Record of Decision will be monitored to ensure that they are carried out as planned and described in the Final EIS.

Appendix 1 of this ROD contains the Selected Alternative's unit design cards and road cards. These cards are an integral part of this decision because they document

the specific resource concerns and responses, management objectives, and mitigation measures to govern the layout of the harvest units. These cards will be used during the implementation process to assure that all aspects of the project are implemented within applicable standards and guidelines and that resource impacts will not be greater than those described in the Final EIS. Similar cards will be used to document any changes to the planned layout as the actual layout and harvest of the units occurs with project implementation.

The implementation record for this project will display: (1) each harvest unit as actually implemented, (2) any proposed changes to the design, location, standards and guidelines, or other mitigation measures for the project, and (3) authorization of the proposed changes.

Procedure for Changes during Implementation

Proposed changes to the authorized project actions will be subject to the requirements of the National Environmental Policy Act (NEPA), the National Forest Management Act of 1976 (NFMA), Section 810 of the Alaska National Interest Lands Conservation Act (ANILCA), the Tongass Timber Reform Act (TTRA), the Coastal Zone Management Act (CZMA), and other laws concerning such changes.

In determining whether and what kind of NEPA action is required, the Forest Supervisor will consider the criteria set forth in the Code of Federal Regulations (40 CFR 1502.9(c)), and Forest Service Handbook (FSH) 1909.15, Sec. 18 for determining whether to supplement an existing Environmental Impact Statement (EIS). In particular, the Forest Supervisor will determine whether the proposed change is a substantial change to the unit or road as planned and approved, and whether the change is relevant to environmental concerns. Connected or interrelated proposed changes regarding particular areas of specific activities will be considered together in making this determination. The cumulative impacts of these changes will also be considered. A change analysis process has been approved by the Forest Supervisor.

The intent of field verification during analysis is to confirm inventory data and to determine the feasibility and general design and location of a unit or road, not to locate final boundaries or road locations. Minor changes are expected during implementation to better meet on-site resource management and protection objectives. Minor adjustments to unit boundaries are likely during final layout for the purpose of improving logging system efficiency. This will usually entail adjusting the boundary to coincide with logical logging setting boundaries. Many of these minor changes will not present sufficient potential impacts to require any specific documentation or other action to comply with applicable laws. Some changes may still require appropriate analysis and documentation to comply with FSH 1909.15, Sec. 18.

Right to Appeal

This decision is subject to administrative review (appeal) pursuant to 36 CFR Part 215. Individuals or organizations who submitted comments during the comment period specified at 215.6 may appeal this decision. The notice of appeal must be in writing, meet the appeal content requirements at 215.14 and be filed with the Appeal Deciding Officer:

Denny Bschor, Regional Forester
Alaska Region
US Department of Agriculture, Forest Service
709 W. 9th Street
PO Box 21628
Juneau, AK 99802-1628

Email address: appeals-alaska-regional-office@fs.fed.us
Fax: (907) 586-7840

The Notice of Appeal, including attachments, must be filed (regular mail, fax, e-mail, express delivery or messenger service) with the Appeal Deciding Officer at the correct location within 45 calendar days of publication of notice of this decision in the *Ketchikan Daily News,* the newspaper of record. The publication date in the newspaper of record is the exclusive means for calculating the time to file an appeal. Those wishing to appeal this decision should not rely upon dates or timeframe information provided by any other source.

Hand-delivered appeals will be accepted at the U.S. Forest Service Regional Office at 709 W. 9th Street, Room 549, in Juneau, Alaska during normal business hours (8:00 am through 4:30 pm) Monday through Friday, excluding holidays.

Implementation of decisions subject to appeal pursuant to 36 CFR Part 215, may occur on, but not before, five business days from the close of the appeal filing period if no appeals are received.

For additional information concerning this decision, contact Tiffany Benna, Kuiu Timber Sale Area Team Leader, Tongass National Forest, Petersburg Ranger District, P.O. Box 1328, Petersburg, Alaska 99833, or call (907) 772-3871.

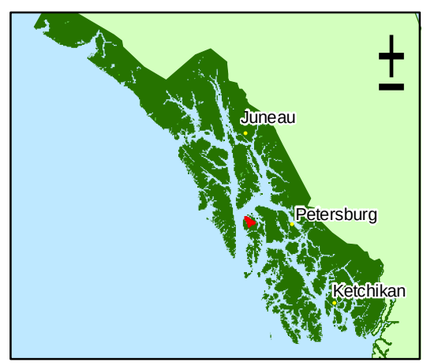
FORREST COLE
Forest Supervisor

5.13.08
DATE

Kuiu Timber Sale
ROD - 1
Record of Decision

Legend

- Clearcut (0% Retention)
- Productive Old-Growth
- Managed Stands
- Non-National Forest
- Lakes/Saltwater
- Roadless Areas
- OGR
- Selected Temporary Roads
- Reconstructed Roads
- Selected System Roads
- Existing Open Roads
- Roads in Storage (Closed)
- Decommissioned Roads
- Project Area Boundary
- 500ft Contour Interval
- Stream Class I & II
- Watershed Boundary



SOUTHEAST ALASKA VICINITY MAP
PROJECT AREA SHOWN IN RED

0 0.25 0.5 1 1.5 2 Miles

Appendix 1

Activity Cards

Appendix 1
Table of Contents

Introduction to Appendix 1

Activity cards are used to explain site-specific proposed activities and any resource concerns and responses. These activities include timber harvest units and proposed and existing roads needed for timber harvest. Both narratives and maps showing site-specific information are provided.

The introduction to Appendix 1 is followed by a narrative card and a map for each selected harvest unit. These units are in numerical order. Figure A1-1 shows all the units as they lie in the project area.

The last section of this Appendix lists existing and proposed National Forest System (NFS) roads used for the Selected Alternative. It describes the current conditions and management objectives, and proposed road management objective changes. The Introduction to the Road Cards explains the terminology used for the Road Management Objective narrative. A map is included that shows all the roads and their desired future management.

Unit Card Header Information

Each Unit Card has a header block with information used to generally describe the stand's size, location, and volume to be harvested. Each header block contains the following information:

Unit Number: This is the number assigned to the unit block during the Logging Systems and Transportation Analysis development.

Unit Acres: This is an estimate of total acres within the unit using aerial photos and GIS information.

Aerial Photo: This is the identification number of the most recent aerial photograph taken during 1998-99.

Land Use Designation (LUD): Land Use Designation is a defined area of land, identified by the Forest Plan, to which specific management direction is applied. All harvest units in the Selected Alternative are in the Timber Production LUD.

Net Timber Volume: This is an estimated volume to be harvested in thousand board feet. This was derived from field estimates and the stand exam program. A cruise will be done during implementation to determine an accurate volume before the timber is sold.

TM Compartment and Stand: This identifier is used for tracking purposes from planning through implementation and future treatments.

Volume Strata Acres: This is the approximate number of acres broken out by volume strata. Three volume strata (high, medium, and low) are recognized in the Forest Plan and explained in the Timber and Vegetation section of Chapter 3 in the Kuiu Timber Sale Final EIS.

Existing Stand Condition: This is the developmental stage of the physical and temporal distribution of trees and other plants in a forested area.

Silvicultural Prescription: This provides information about the methods, techniques, timing, and monitoring of vegetative treatments. The detailed silvicultural prescription is in the planning record.

Logging Method/Transportation: This identifies the method of logging in the unit and the transportation used.

Harvest Treatments

Silvicultural prescriptions include the following Unit Cards plus the sale layout and marking guidelines that will be completed for each timber harvest unit in the Selected Alternative. Minor changes can be expected during implementation to better meet on-site resource management and protection objectives. Minor adjustments to unit boundaries are also likely during final layout for the purpose of improving logging system efficiency or for site conditions.

Even-aged Management, Clearcut

All merchantable trees will be harvested. The objectives of this system are to create a fast-growing stand of trees to maximize wood fiber production, favorable timber sale harvest economics and logging feasibility. These stands will regenerate into a mostly single-aged stand.

Resource Concerns and Responses

In the Kuiu Timber Sale Area, most of the economic, wildlife, and watershed concerns are mitigated with the silvicultural system. Other resource concerns, such as soils, scenery, and fisheries, are mitigated by unit design and adherence to Forest Plan Standards and Guidelines and Best Management Practices (BMPs).

Riparian Management Areas

Forest Plan Standards and Guidelines and BMP 12.6 direct the design of Riparian Management Areas (RMAs) associated with each stream in the Project Area. The Standards and Guidelines prohibit programmed commercial timber harvest in RMAs associated with all Class I, Class II, and most Class III streams, except for right-of-way clearing for road construction.

RMAs vary in width from the edge of the stream channel according to process group (Table A1-1) and stream value class (Table A1-2). All Class I and Class II streams that flow directly into Class I streams require a buffer that is 100 horizontal feet from the bankfull margin to protect it from commercial timber harvest. Depending on the channel type, RMA widths can be up to 140 feet wide on either side of some Class I and Class II. RMAs adjacent to Class III streams are protected from commercial timber harvest, which is defined as the V-notch (side-slope break).

Unit Card maps show the location of all streams, numbered for reference, and the associated RMAs. RMA widths for each Class I, Class II, and Class III stream are described in the Unit Card narratives.

Windthrow concerns within riparian buffers are addressed in the Unit Card narratives. Riparian buffers on south facing slopes in units with an even-aged prescription will be protected by retaining additional trees adjacent to the buffers. Units with windthrown prone buffers and trees less than 16 inches DBH will be protected by feathering the edge for a distance of 50 horizontal feet. Trees that cannot be felled away from the buffer will be retained.

Log yarding practices are based on slope stability, soil disturbance, channel type, and stream class. Additional measures are taken to protect RMAs from possible disturbance associated with tree felling and yarding. Harvest activities near Class I, Class II, and Class III streams require that trees be felled away from the stream and that trees yarded across or along stream courses be fully suspended to minimize the exposure of mineral soil. Trees near Class IV streams are felled away from the stream whenever feasible and logging debris introduced into Class IV streams is removed. Class IV streams are treated as part of the hillside, under slope stability standards and guidelines. The objective is to minimize soil erosion, mass movement, and formation of new channels.

Best Management Practices

The following Best Management Practices (BMPs) would be applied in order to protect water quality in the project area as specified in the Forest Plan (pages C-1 to C-3). The BMPs are cited on the Unit Cards and Road Cards where appropriate. Not all BMPs apply to every situation.

BMP 12.6 (Riparian Area Designation and Protection) – To identify riparian areas and their associated management activities.

BMP 12.6a (Buffer Design and Layout) – To design streamside buffers to meet objectives defined during the implementation of BMP 12.6.

BMP 12.17 (Revegetation of Disturbed Areas) – To provide ground cover to minimize soil erosion.

BMP 13.5 (Identification and Avoidance of Unstable Areas) – To avoid triggering mass movements and resultant erosion and sedimentation by excluding unstable areas from timber harvest.

BMP 13.9 (Determining Guidelines for Yarding Operations) – To select appropriate yarding systems and guidelines for protecting soil and water resources.

BMP 13.16 (Stream Channel Protection – Implementation and Enforcement) – To provide the site-specific stream protection prescriptions consistent with objectives identified under BMPs 12.6 and 12.6a. Objectives may include the following:

- Maintain the natural flow regime.
- Provide for unobstructed passage of storm flows.
- Maintain integrity of the riparian buffer to filter sediment and other pollutants.

- Restore the natural course of any stream that has been diverted as soon as practicable.
- Maintain natural channel integrity to protect aquatic habitat and other beneficial uses.
- Prevent adverse changes to the natural stream temperature regime.

BMP 14.1 (Transportation Planning) – To assure soil and water resources are considered in transportation planning activities.

BMP 14.2 (Location of Transportation Facilities) – To assure water resources protection measures are considered when locating roads and trails.

BMP 14.3 (Design of Transportation Facilities) – To incorporate site-specific soil and water resource protection measures into the design of roads and trails.

BMP 14.5 (Road and Trail Erosion Control Plan) – Develop erosion control plans for road or trail projects to minimize or mitigate erosion sedimentation and resulting water quality degradation prior to the initiation of construction and maintenance activities. Ensure compliance through effective contract administration and timely implementation of erosion control measures.

BMP 14.6 (Timing Restrictions for Construction Activities) – Minimize erosion potential by restricting the operating schedule and conducting operations during lower risk periods.

BMP 14.7 (Measures to Minimize Mass Failures) – Minimize the chance and extent of road-related mass failures, including landslides and embankment slumps.

BMP 14.8 (Measures to Minimize Surface Erosion) – Minimize the erosion from cutslopes, fillslopes, and the road surface, and consequently reduce the risk of sediment production.

BMP 14.9 (Drainage Control to Minimize Erosion and Sedimentation) – Minimize the erosive effects of concentrated water flows from transportation facilities and the resulting degradation of water quality through proper design and construction of drainage control systems.

BMP 14.10 (Pioneer Road Construction) – Minimize sediment production associated with pioneer road construction.

BMP 14.11 (Timely Erosion Control Measures for Incomplete Projects) – Minimize erosion of and sedimentation from disturbed ground on incomplete projects by completing erosion control work prior to seasonal or extended shutdowns.

BMP 14.12 (Control of Excavation and Sidecast Material) – Minimize sedimentation from unconsolidated excavated and sidecast material caused by road construction, reconstruction, or maintenance.

BMP 14.14 (Control of In-channel Operations) – Minimize stream channel disturbances and related sediment production.

BMP 14.15 (Diversion of Flows Around Construction Sites) – Identify and implement diversion and de-watering requirements at construction sites to protect water quality and downstream uses.

BMP 14.17 (Bridge and Culvert Design and Installation) – Minimize adverse impacts on water quality, stream courses, and fisheries resources from the installation of bridges, culverts, or other stream crossings.

BMP 14.20 (Road Maintenance) – Maintain all roads in a manner which provides for soil and water resources protection by minimizing rutting, road prism failures, sidecasting, and blockage of drainage facilities.

BMP 14.22 (Access and Travel Management) – Control access and manage road use to reduce the risk of erosion and sedimentation from road surface disturbance especially during the higher risk periods associated with high runoff and spring thaw conditions.

Process Groups and Channel Types

The Tongass National Forest defines stream channel types according to the Channel Type User Guide (USDA Forest Service 1992), the foundation upon which aquatic habitat management prescriptions are developed. Channel types are defined within the context of fluvial process groups that describe the interrelationship between watershed runoff, landform relief, geology, and glacial or tidal influences on fluvial erosion and deposition processes. Individual channel type classifications are defined by physical attributes such as channel gradient, channel width, channel pattern, stream bank incision and containment. Table A1-1 shows the Forest Plan codes used on the Unit Card narratives. See the Forest Plan, Figure D-1 (page D-4) for a visual representation of the typical distribution of channel process groups. Each Unit Card summarizes the protection for a particular unit. Only the channel types found in proposed timber harvest units are listed.

Table A1-1. Channel Types in or adjacent to proposed harvest units

Process Group	Channel Type Code	Channel Type Description
High Gradient Contained	HC2	Shallowly to Moderately Incised Footslope Channel
	HC3	Deeply Incised Upper Valley Channel
	HC5	Shallowly Incised Very High Gradient Channel
	HC6	Deeply Incised Mountain Slope Channel
Moderate Gradient Contained	MC2	Moderate Width and Incision Contained Channel
Moderate Gradient Mixed Control	MM1	Narrow Mixed Control Channel
	MM2	Moderate Width Mixed Control Channel

Table A1-2. Stream Value Classes

Stream Value Class	Criteria
Class I	Streams and lakes with anadromous or adfluvial fish or fish habitat; or high quality resident fish waters, or habitat above fish migration barriers known to be reasonable enhancement opportunities for anadromous fish.
Class II	Streams and lakes with resident fish or fish habitat and generally steep (6-25 percent or higher) gradient (can also include streams with a 0-6 percent gradient) where no anadromous fish occur, and otherwise not meeting Class I criteria.
Class III	Streams are perennial and intermittent streams that have no fish populations or fish habitat, but have sufficient flow or sediment and debris transport to directly influence downstream water quality or fish habitat capability. For streams less than 30 percent gradient, special care is needed to determine if resident fish are present.
Class IV	Other intermittent, ephemeral, and small perennial channels with insufficient flow or sediment transport capabilities to have immediate influence on downstream water quality or fish habitat capability. Class IV streams do not have the characteristics of Class I, II, or III streams and have a bankfull width of at least 0.3 meter (1 foot).

Unit Cards

Kuiu Timber Sale Selected Alternative Unit Card

Unit Number:	101	**Unit Acres:**	96		
1999 Aerial Photo:	198_106, 198_107	**Land Use Designation:**	Timber Production	**Net Timber Volume:**	2,769 MBF
TM-Compartment and Stand:	2-121	**Volume Strata Acres:**	High 84 Medium 12 Low		

Existing Stand Condition: Old-growth

Silvicultural Prescription: Even-aged management, clearcut

Logging Method/ Transportation: Cable / Extend NFS Road (46021)

Resource Concerns & Responses

Fish Habitat / Watershed

Concern: Streams 1 and 4 are Class III, channel type HC5.
Streams 2, 3, and 5-7 are Class IV, channel type HC5.

Response: Streams 1 and 4: No programmed commercial timber harvest within the RMA, which is defined as the V-notch. Implement BMPs 12.6, 12.6a., 13.9, and 13.16. Streams 2, 3, and 5-7: Split yard away from Class IV streams whenever possible. Buck, limb, and top felled trees clear of streamcourses. Remove any slash deposited in streamcourse as a result of timber harvest activities. Implement BMPs 12.6, 13.9, and 13.16.

Soils

Concern: Extreme hazard soils (MMI-4) along western boundary (14 acres) of the unit and at the bottom southeast section of unit (2 acres).

Response: Field survey by soil scientist determined 14 western acres as stable. Unit was designed to eliminate 2 acres at bottom southeast section. Use partial suspension in western section.

Wildlife/Biological Diversity

Concern: Large amount of high Volstrata present in unit. Red squirrel and black bear use reported in unit. 35 acres of medium (HSI 0.40 to 0.50) deer habitat value occurs in this unit. 78 acres of high value marten (HSI >0.89) habitat occurs within unit.

Response: Harvest would not isolate habitat by removing corridors linking low elevation habitat to high elevations.

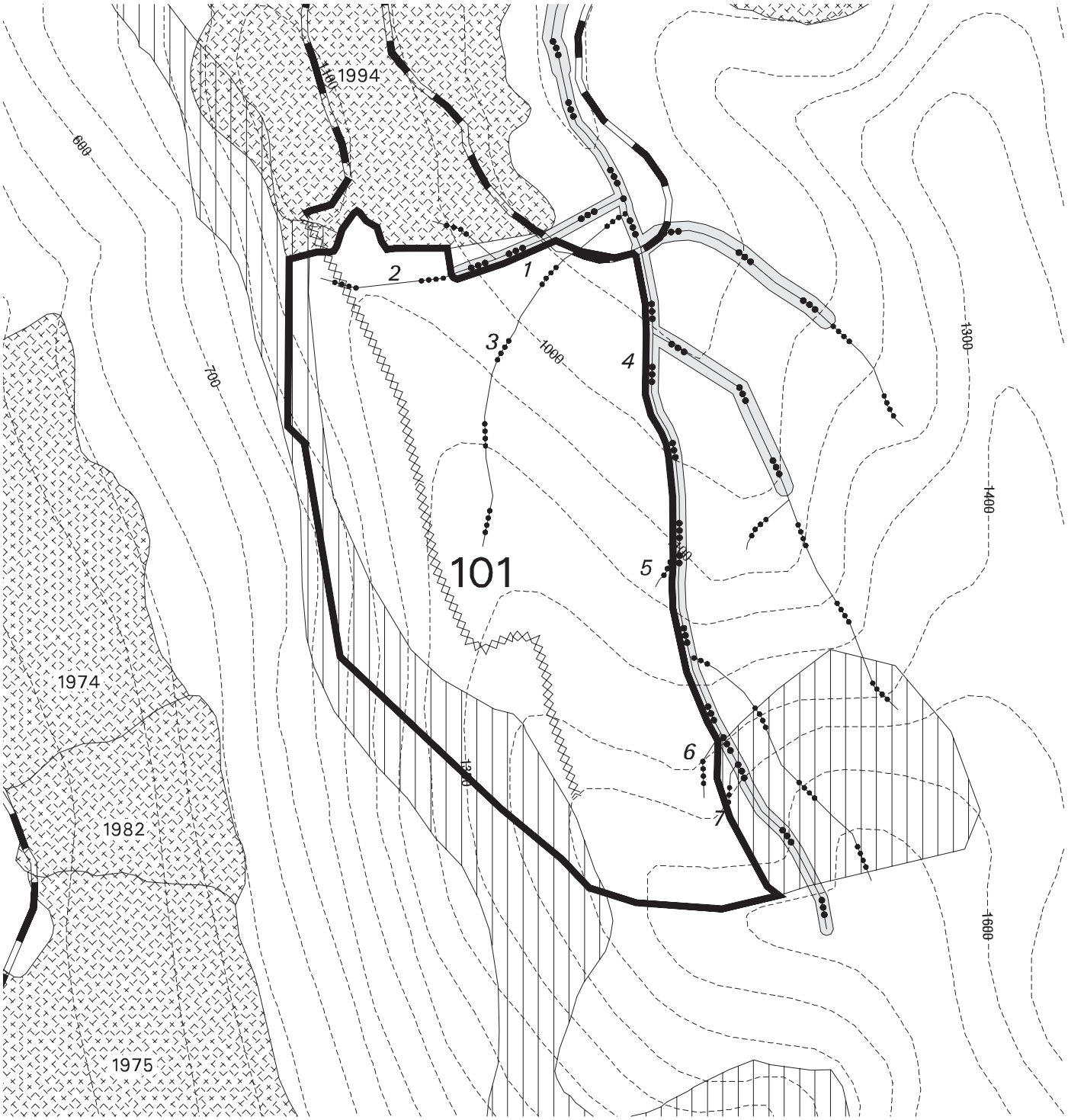
Vegetation/Timber

Concern: Even-aged opening size is close to 100 acres.

Response: If after layout harvest unit exceeds 100 acres, additional analysis will be done following Forest Plan Standards and Guidelines (p 4-72).

No resource concerns for: Scenery, Karst, Wetlands, Heritage

Kuiu Record of Decision Unit 101



- Existing Managed Stands
- Riparian Management Area
- Forest Plan Old-Growth Reserve
- Extreme Hazard Soils
- High Hazard Soils
- Unit 101 Boundary
- Adjacent Units
- Stream Class I
- Stream Class II
- Stream Class III
- Stream Class IV
- Open NFS Roads
- Closed NFS Roads
- Decomissioned Roads
- Selected NFS Roads
- Reconditioned Roads
- Selected Temporary Roads
- 100-ft. Contour Interval

0 660 1320

Scale is 1 inch = 660 feet

Kuiu Timber Sale Selected Alternative Unit Card

Unit Number:	109	**Unit Acres:**	100		
1999 Aerial Photo:	198_74, 198_75	**Land Use Designation:**	Timber Production	**Net Timber Volume:**	2,681 MBF
TM-Compartment and Stand:	2-125	**Volume Strata Acres:**	High 79 Medium 14 Low 7		

Existing Stand Condition: Old-growth

Silvicultural Prescription: Even-aged management, clearcut

Logging Method/ Transportation: Cable / One temporary road and one reconditioned NFS Road (6417)

Resource Concerns & Responses

Fish Habitat / Watershed

Concern: Stream 1 is Class I, Channel Type MM2.
Stream 2 is Class II, Channel Type HC3.
Stream 3 is Class III, Channel Type HC3.
Streams 4 and 5 are Class IV, Channel Type HC5.
Stream 6 is Class III, Channel Type HC5.

Response: Stream 1: No programmed commercial timber harvest in the RMA, which is defined as the greatest of the flood plain, riparian vegetation or soils, riparian associated wetland fens, or 120 feet.
Stream 2: No programmed commercial timber harvest within the RMA, which is defined as within 100 feet of the stream or to the top of the V-notch, whichever is greater.
Streams 3 and 6: No programmed commercial timber harvest within the RMA, which is defined as the V-notch.
Streams 4 and 5: Split yard away from Class IV streams whenever possible. Buck, limb, and top felled trees clear of streamcourses. Remove any slash deposited in streamcourse as a result of timber harvest activities.

Concern: All Streams: Implement BMPs 12.6, 12.6a, 13.9, and 13.16.

Response: Location makes this stand susceptible to windthrow potential.
Streams 1, 2, and 3: The riparian buffer will be protected by feathering the edge for a distance of 50 horizontal feet where trees are less than 16 inches DBH. Trees that cannot be felled away from the buffer will be retained.
Stream 6: The riparian buffer will be protected by feathering the edge for a distance of 50 horizontal feet where trees are less than 16 inches DBH. Trees cannot be felled away from the buffer will be retained.

Wildlife/Biological Diversity

Concern: Large amount of high and medium Volstrata present in unit. 39 acres of high value deer habitat (HSI >0.60), 53 acres of medium value deer habitat (HSI 0.40 to 0.50) and 79 acres of high value marten habitat (HSI >0.89) occur within this unit. Unit is potentially a travel corridor for animals from high elevation to low elevation.

Response: A clearcut harvest prescription would reduce habitat value and create large area of second growth. It would remove travel corridor between high elevation and low elevation and isolate some higher elevation habitat.

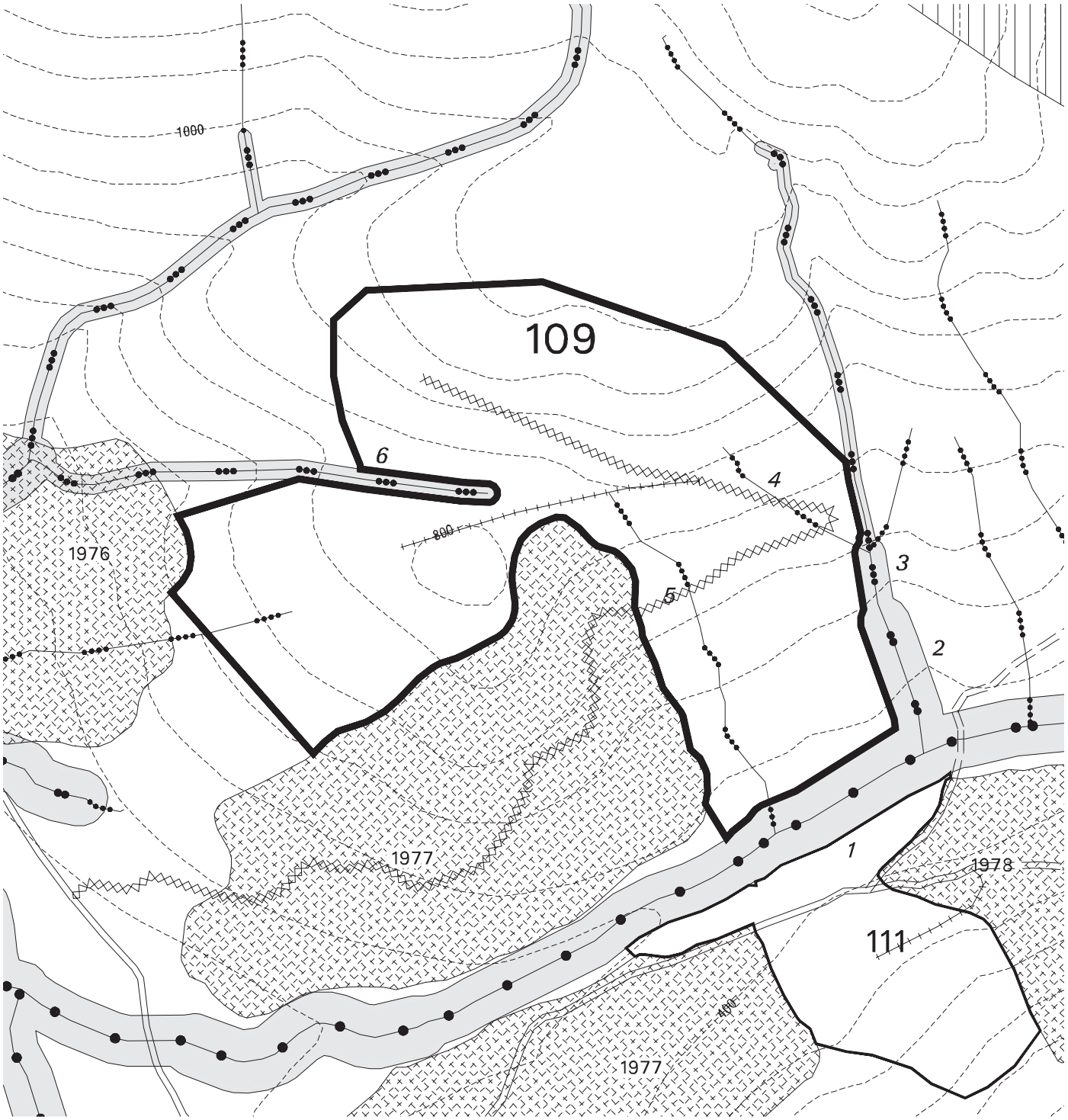
Vegetation/Timber

Concern: Even-aged opening size is close to 100 acres.

Response: If after layout harvest unit exceeds 100 acres, additional analysis will be done following Forest Plan Standards and Guidelines (p 4-72).

No resource concerns for: Scenery, Soils, Karst, Wetlands, Heritage

Kuiu Record of Decision Unit 109



Existing Managed Stands
Riparian Management Area
Forest Plan Old-Growth Reserve
Extreme Hazard Soils
High Hazard Soils
Unit 109 Boundary
Adjacent Units
Stream Class I
Stream Class II
Stream Class III
Stream Class IV

Open NFS Roads
Closed NFS Roads
Decomissioned Roads
Selected NFS Roads
Reconditioned Roads
Selected Temporary Roads
100-ft. Contour Interval

0 660 1320

Scale is 1 inch = 660 feet

Kuiu Timber Sale Selected Alternative Unit Card

Unit Number:	111	**Unit Acres:**	24		
1999 Aerial Photo:	198_74, 298_127	**Land Use Designation:**	Timber Production	**Net Timber Volume:**	321 MBF
TM-Compartment and Stand:	2-126	**Volume Strata Acres:**	High 8 Medium 16 Low 0		

Existing Stand Condition: Old-growth

Silvicultural Prescription: Even-aged management, clearcut

Logging Method/ Transportation: Cable / One temporary road and one reconditioned NFS Road (6417)

Resource Concerns & Responses

Fish Habitat/Watershed

Concern: Stream 1 is Class I, Channel Type MC2/MM1.

Response: Stream 1, MC2 section: No programmed commercial timber harvest within the RMA, which is defined as within 100 feet of the channel, or to the top of the side-slope break, whichever is greater. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.
Stream 1 MM1 section: No programmed commercial timber harvest in the RMA, which is defined as the greatest of the flood plain, riparian vegetation or soils, riparian associated wetland fens, or 120 feet. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.

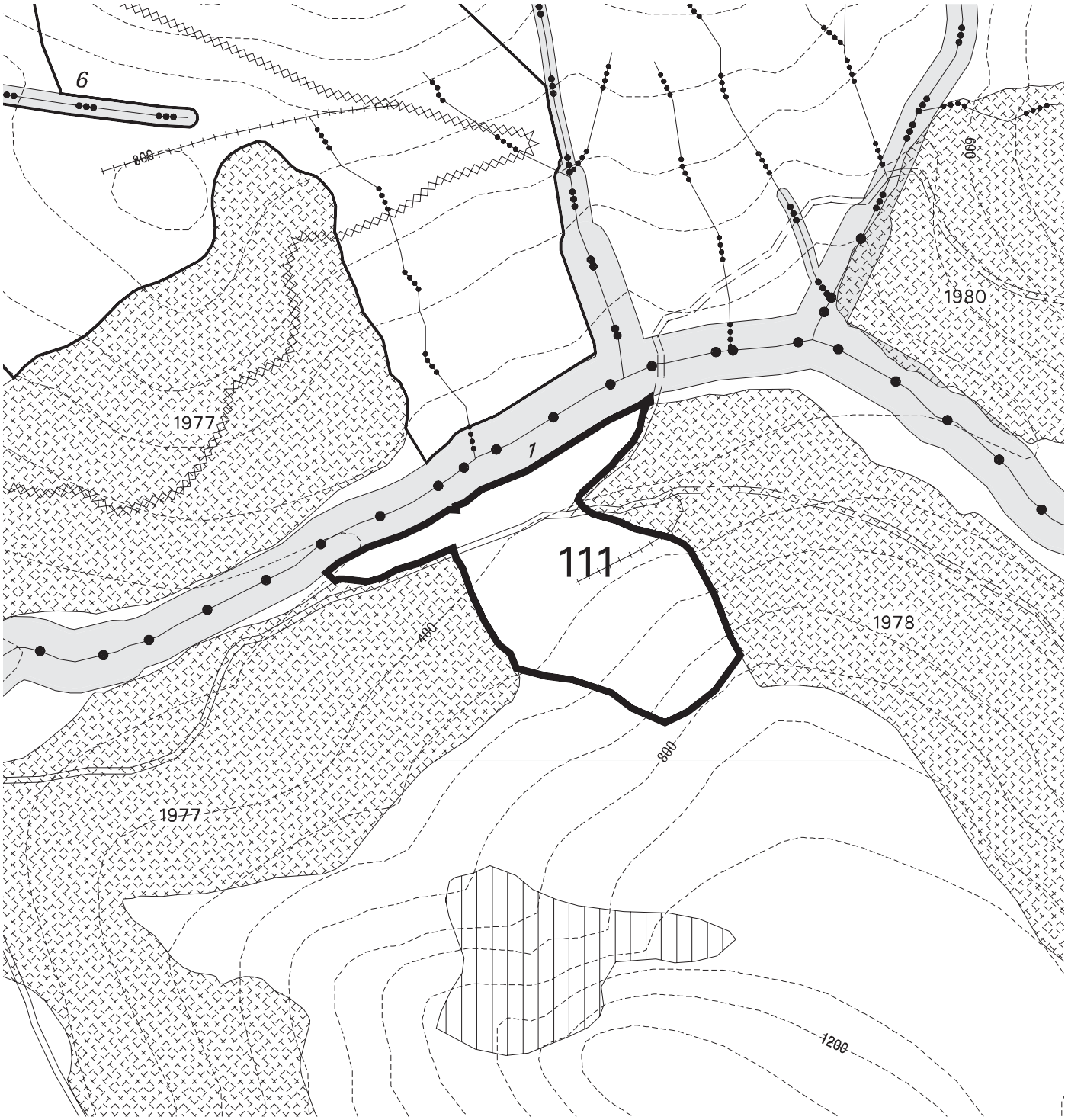
Wildlife/Biological Diversity

Concern: Only high and medium Volstrata present. This area was identified as a wildlife corridor by the IDT. 8 acres of medium value (HSI 0.40 to 0.50) deer habitat and 8 acres of high value marten (HSI >0.89) habitat are within this unit.

Response: The selected alternative would reduce habitat value, create a large area of second growth, and remove a corridor link between high and low elevations.

No resource concerns for: Scenery, Soils, Karst, Wetlands, Heritage, Vegetation

Kuiu Record of Decision Unit 111



- Existing Managed Stands
- Riparian Management Area
- Forest Plan Old-Growth Reserve
- Extreme Hazard Soils
- High Hazard Soils
- Unit 111 Boundary
- Adjacent Units
- Stream Class I
- Stream Class II
- Stream Class III
- Stream Class IV
- Open NFS Roads
- Closed NFS Roads
- Decomissioned Roads
- Selected NFS Roads
- Reconditioned Roads
- Selected Temporary Roads
- 100-ft. Contour Interval

0 660 1320

Scale is 1 inch = 660 feet

Kuiu Timber Sale Selected Alternative Unit Card

Unit Number:	112	**Unit Acres:**	22		
1999 Aerial Photo:	198_ 77, 298_124	**Land Use Designation:**	Timber Production	**Net Timber Volume:**	705 MBF
TM-Compartment and Stand:	3-126	**Volume Strata Acres:**	High 22 Medium 0 Low 0		

Existing Stand Condition: Old-growth

Silvicultural Prescription: Even-aged management, clearcut

Logging Method/ Transportation: Cable / One existing NFS Road (6418)

Resource Concerns & Responses

Fish Habitat/Watershed

Concern: Stream 1 is Class III, Channel Type HC3.
Streams 2 and 3 are Class IV, Channel Type HC5.

Response: Stream 1: No programmed commercial timber harvest within the RMA, which is defined as the V-notch. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.
Streams 2 and 3: Split yard away from Class IV streams whenever possible. Buck, limb, and top felled trees clear of streamcourses. Remove any slash deposited in streamcourse as a result of timber harvest activities. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.

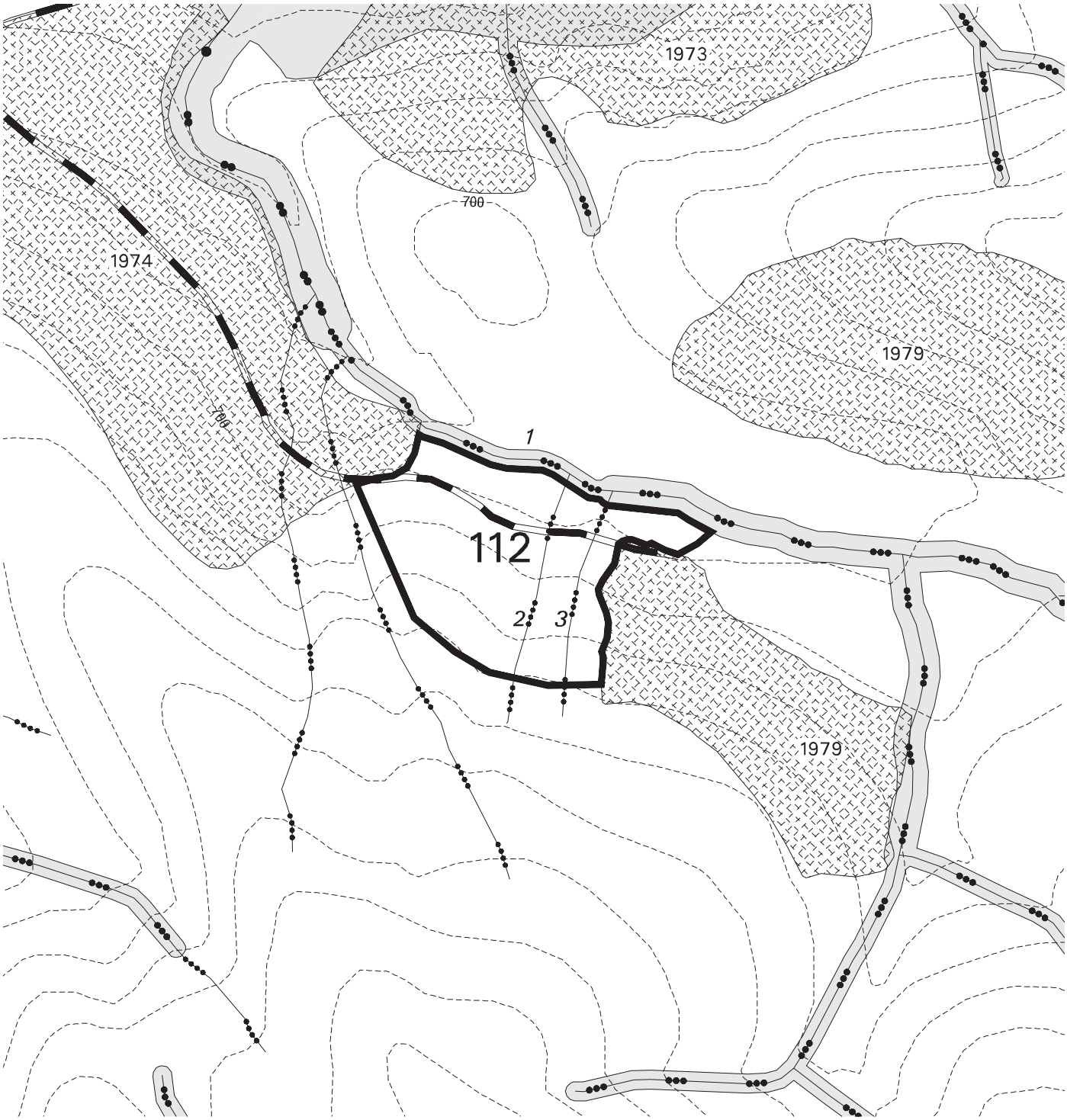
Wildlife/Biological Diversity

Concern: Deer, bear and cavity nesting use, only high Volstrata present in unit. 14 acres of medium value (HSI 0.40 to 0.50) deer habitat and 22 acres of high value marten (HSI >0.89) habitat are within this unit.

Response: The selected alternative would reduce habitat value, create large area of second growth, and remove a travel corridor between high and low elevations.

No resource concerns for: Scenery, Soils, Wetlands, Karst, Heritage, Vegetation

Kuiu Record of Decision Unit 112



Existing Managed Stands
Riparian Management Area
Forest Plan Old-Growth Reserve
Extreme Hazard Soils
High Hazard Soils
Unit 112 Boundary
Adjacent Units
Stream Class I
Stream Class II
Stream Class III
Stream Class IV

Open NFS Roads
Closed NFS Roads
Decomissioned Roads
Selected NFS Roads
Reconditioned Roads
Selected Temporary Roads
100-ft. Contour Interval

0 660 1320

Scale is 1 inch = 660 feet

Kuiu Timber Sale Selected Alternative Unit Card

Unit Number:	204	**Unit Acres:**	59		
1999 Aerial Photo:	598_130, 598_131	**Land Use Designation:**	Timber Production	**Net Timber Volume:**	1,027 MBF
TM-Compartment and Stand:	3-127	**Volume Strata Acres:**	High 28 Medium 30 Low 0		

Existing Stand Condition: Old-growth

Silvicultural Prescription: Even-aged management, clearcut

Logging Method/ Transportation: Cable / Two new NFS Roads (46032 and 46033)

Resource Concerns & Responses

Fish Habitat/Watershed

Concern: Stream 1 is Class III, Channel Type HC6
Stream 2 is Class IV, Channel Type HC5
Stream 3 is Class IV, Channel Type HC5

Response: Stream 1: No programmed commercial timber harvest within the RMA, which is defined as the V-notch. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.
Streams 2 and 3: Split yard away from Class IV streams whenever possible. Buck, limb, and top felled trees clear of streamcourses. Remove any slash deposited in streamcourse as a result of timber harvest activities. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.

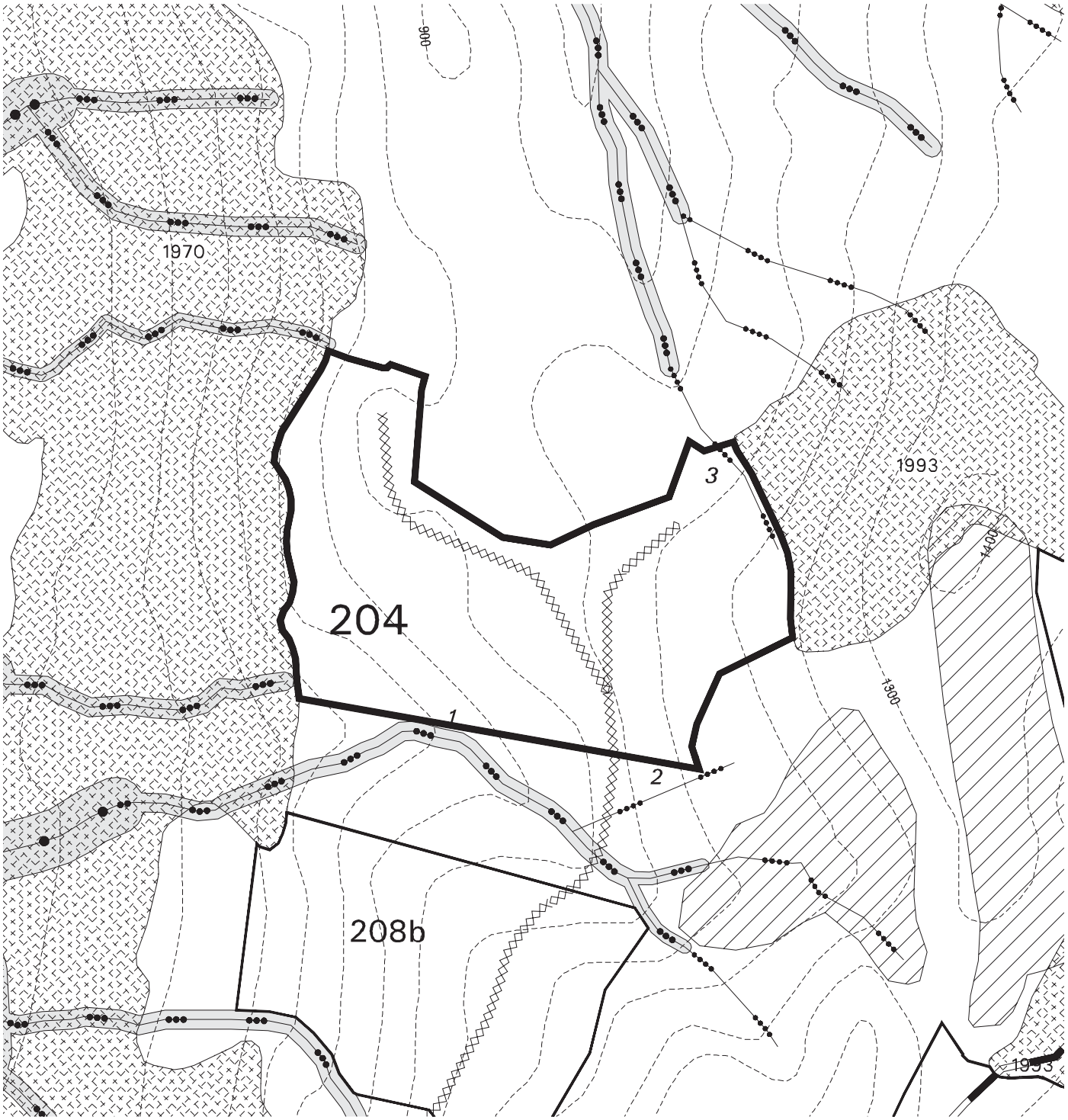
Wildlife/Biological Diversity

Concern: Large amount of high and medium Volstrata reported in this unit. 14 acres of high value deer habitat (HSI >0.60), 24 acres of medium value deer habitat (HSI 0.40 to 0.50) and 35 acres of high value marten habitat (HSI >0.89) are located within this unit.

Response: Clearcut harvest will remove all old-growth habitat and reduce deer and marten habitat values. Harvest will not isolate high elevation habitat. No travel corridors will be removed.

No resource concerns for: Soils, Karst, Wetlands, Scenery, Heritage, Vegetation

Kuiu Record of Decision Unit 204



Existing Managed Stands
Riparian Management Area
Forest Plan Old-Growth Reserve
Extreme Hazard Soils
High Hazard Soils
Unit 204 Boundary
Adjacent Units
Stream Class I
Stream Class II
Stream Class III
Stream Class IV

Open NFS Roads
Closed NFS Roads
Decomissioned Roads
Selected NFS Roads
Reconditioned Roads
Selected Temporary Roads
100-ft. Contour Interval

0 660 1320

Scale is 1 inch = 660 feet

Kuiu Timber Sale Selected Alternative Unit Card

Unit Number:	207	**Unit Acres:**	62		
1999 Aerial Photo:	598_100, 598_101	**Land Use Designation:**	Timber Production	**Net Timber Volume:**	1,004 MBF
TM-Compartment and Stand:	3-129	**Volume Strata Acres:**	High 59 Medium 3 Low 0		

Existing Stand Condition: Old-growth

Silvicultural Prescription: Even-aged management, clearcut

Logging Method/ Transportation: Cable and Shovel logging / One existing NFS Road (46096)

Resource Concerns & Responses

Fish Habitat/Watershed

Concern: Streams 1, 2, 4, 5, and 6 are Class IV, Channel Type HC5. Stream 3 is Class III, Channel Type HC6.

Response: Streams 1, 2, 4, 5, and 6: Split yard away from Class IV streams whenever possible. Buck, limb, and top felled trees clear of streamcourses. Remove any slash deposited in streamcourse as a result of timber harvest activities. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.

Concern: Stream 3: No programmed commercial timber harvest within the RMA, which is defined as the V-notch. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.

Response: Location makes stand susceptible to windthrow. Stream 3: The riparian buffer will be protected by feathering the edge for a distance of 50 horizontal feet where trees are less than 16 inches DBH. Trees cannot be felled away from the buffer will be retained.

Soils/Wetlands

Concern: Initial concerns were for extreme hazard soils (MMI-4) in proposed unit and for protection of high value sedge fen at bottom of unit.

Response: Unit boundary was designed to avoid extreme hazard soils (MMI-4) from harvest which should also provide protection for high value sedge fen.

Wildlife/Biological Diversity

Concern: A large amount of high Volstrata is located in this unit (50 acres). 1 acre of high value deer habitat (HSI >0.60), 12 acres of medium value deer habitat (HSI 0.40 to 0.50) and 58 acres of high value marten habitat (HSI >0.89) are within the unit.

Response: Selected Alternative will remove all old-growth habitat within the unit through clearcut harvest. This will isolate and remove travel corridors between high and low elevation.

No resource concerns for: Karst, Wetlands, Scenery, Heritage, Vegetation

Kuiu Record of Decision Unit 207

- Existing Managed Stands
- Riparian Management Area
- Forest Plan Old-Growth Reserve
- Extreme Hazard Soils
- High Hazard Soils
- Unit 207 Boundary
- Adjacent Units
- Stream Class I
- Stream Class II
- Stream Class III
- Stream Class IV
- Open NFS Roads
- Closed NFS Roads
- Decomissioned Roads
- Selected NFS Roads
- Reconditioned Roads
- Selected Temporary Roads
- 100-ft. Contour Interval

0 660 1320

Scale is 1 inch = 660 feet

Kuiu Timber Sale Selected Alterative Unit Card

Unit Number:	208a	**Unit Acres:**	43		
1999 Aerial Photo:	598_99, 598_100	**Land Use Designation:**	Timber Production	**Net Timber Volume:**	864 MBF
TM-Compartment and Stand:	3-130	**Volume Strata Acres:**	High 25 Medium 18 Low 0		

Existing Stand Condition: Old-growth

Silvicultural Prescription: Even-aged management, clearcut

Logging Method/ Transportation: Cable / One new NFS Road (46032)

Resource Concerns & Responses

Fish Habitat/Watershed

Concern: Stream 1 is Class IV, Channel Type HC5.
Stream 2 is Class II, Channel Type HC5.
Stream 3 is Class III, Channel Type HC5.

Response: Stream 1: Split yard away from Class IV streams whenever possible. Buck, limb, and top felled trees clear of streamcourses. Remove any slash deposited in streamcourse as a result of timber harvest activities. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.
Stream 2: No programmed commercial timber harvest within the RMA, which is defined as within 100 feet of the stream or to the top of the V-notch, whichever is greater. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.
Stream 3: No programmed commercial timber harvest within the RMA, which is defined as the V-notch. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.

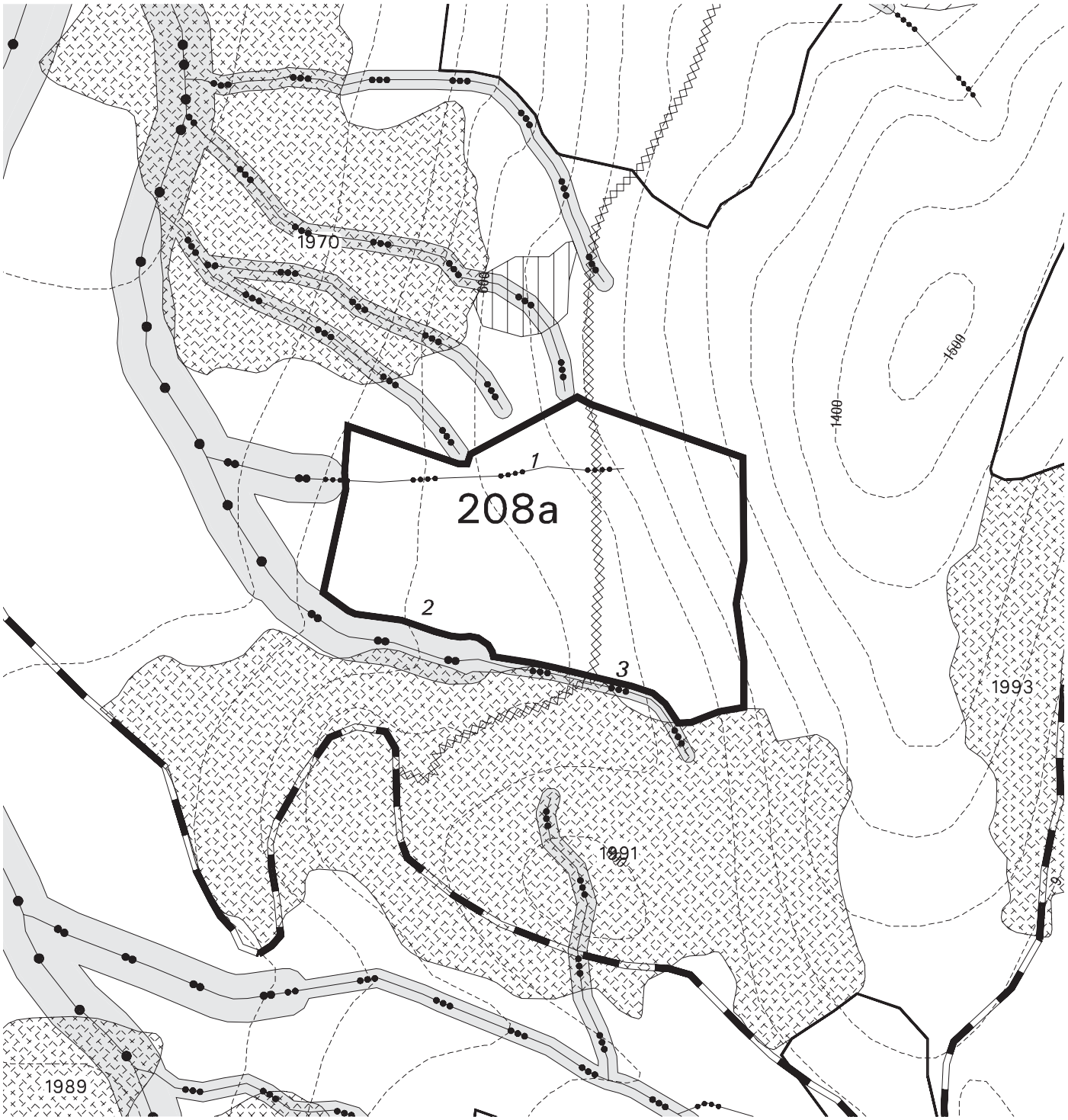
Wildlife/Biological Diversity

Concern: Wolf den found in 2003 and monitored 2003-2005. No activity noted 2004-2005. Large amount of high and medium Volstrata reported in this unit. 9 acres of high value deer habitat (HSI >0.60), 15 acres of medium value deer habitat (HSI 0.40 to 0.50) and 24 acres of high value marten habitat (HSI >0.89) are within the unit.

Response: Wolf den buffer prescribed for site. Unit split on both sides of den and buffer area. Clearcut prescription will remove all old-growth habitat and reduce the deer and marten habitat values when unit is harvested. Harvest would not isolate high elevation habitat. No travel corridors would be removed.

No resource concerns for: Karst, Wetlands, Soils, Scenery, Heritage, Vegetation

Kuiu Record of Decision Unit 208a



Existing Managed Stands
Riparian Management Area
Forest Plan Old-Growth Reserve
Extreme Hazard Soils
High Hazard Soils
Unit 208a Boundary
Adjacent Units
Stream Class I
Stream Class II
Stream Class III
Stream Class IV

Open NFS Roads
Closed NFS Roads
Decomissioned Roads
Selected NFS Roads
Reconditioned Roads
Selected Temporary Roads
100-ft. Contour Interval

0 660 1320

Scale is 1 inch = 660 feet

Kuiu Timber Sale Selected Alternative Unit Card

Unit Number:	208b	**Unit Acres:**	40		
1999 Aerial Photo:	598_100, 598_101	**Land Use Designation:**	Timber Production	**Net Timber Volume:**	1,621 MBF
TM-Compartment and Stand:	3-131	**Volume Strata Acres:**	High 40 Medium 0 Low 0		

Existing Stand Condition: Old-growth

Silvicultural Prescription: Even-aged management, clearcut

Logging Method/ Transportation: Cable / One new NFS Road (46032)

Resource Concerns & Responses

Fish Habitat/Watershed

Concern: Stream 1 is Class III, Channel Type HC5.
Stream 2 is Class III, Channel Type HC5.

Response: Stream 1: Split yard away from Class IV streams whenever possible. Buck, limb, and top felled trees clear of streamcourses. Remove any slash deposited in streamcourse as a result of timber harvest activities. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.

Stream 2: No programmed commercial timber harvest within the RMA, which is defined as within 100 feet of the stream or to the top of the V-notch, whichever is greater. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.
Stream 3: No programmed commercial timber harvest within the RMA, which is defined as the V-notch. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.

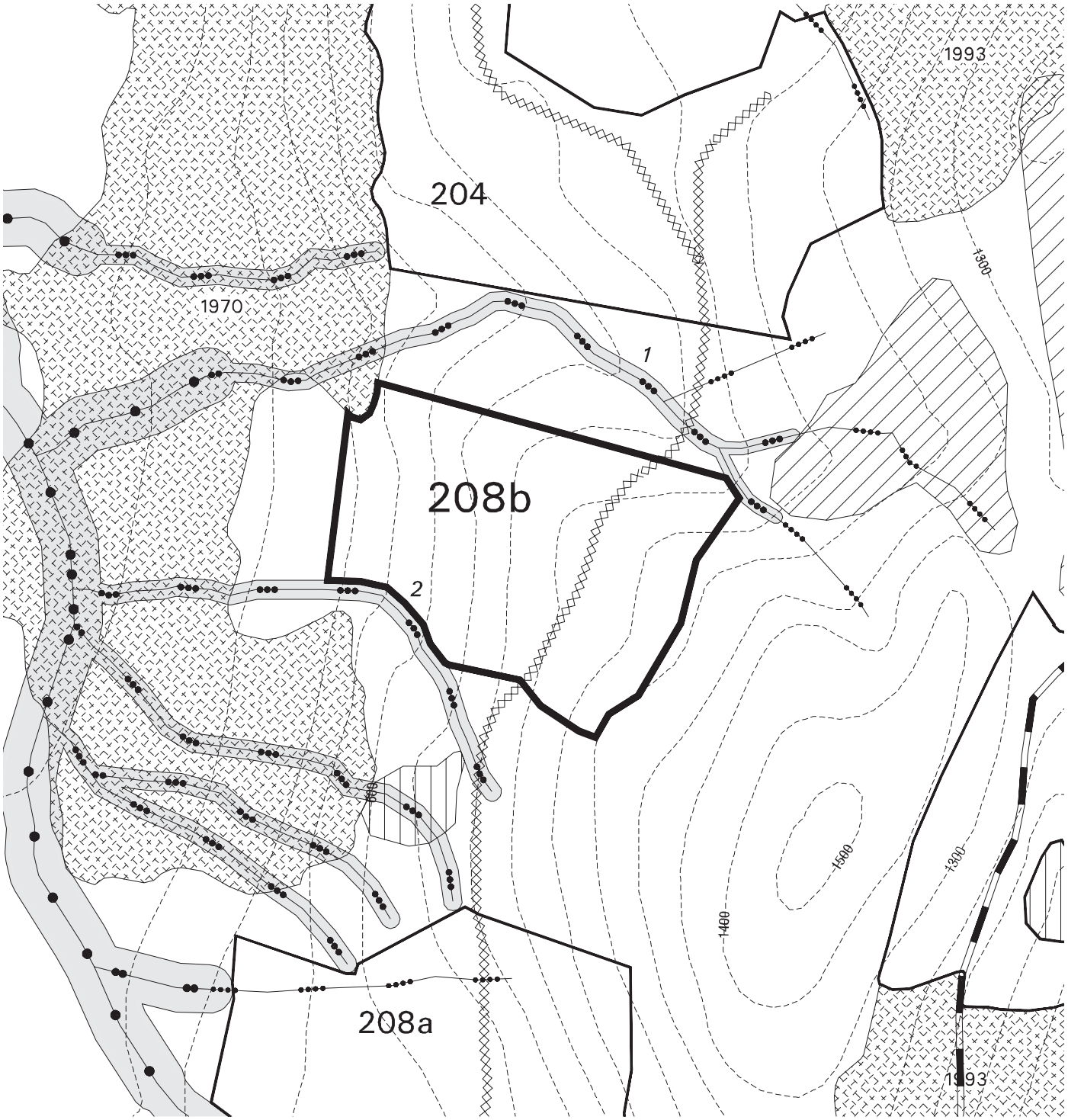
Wildlife/Biological Diversity

Concern: Wolf den found 2003 and monitored 2003-2005. No activity noted 2004-2005. Large amount of high Volstrata reported in this unit. 21 acres of high value deer habitat (HSI >0.60), 20 acres of medium value deer habitat (HSI 0.40 to 0.50) and 40 acres of high value marten habitat (HSI >0.89) are within the unit.

Response: Wolf den buffer prescribed for site. Unit split on both sides of den and buffer area. Clearcut prescription would remove all old-growth habitat and reduce the deer and marten habitat values. Harvest would not isolate high elevation habitat. No travel corridors would be removed.

No resource concerns for: Karst, Wetlands, Soils, Scenery, Heritage, Vegetation

Kuiu Record of Decision Unit 208b



- Existing Managed Stands
- Riparian Management Area
- Forest Plan Old-Growth Reserve
- Extreme Hazard Soils
- High Hazard Soils
- Unit 208b Boundary
- Adjacent Units
- Stream Class I
- Stream Class II
- Stream Class III
- Stream Class IV
- Open NFS Roads
- Closed NFS Roads
- Decomissioned Roads
- Selected NFS Roads
- Reconditioned Roads
- Selected Temporary Roads
- 100-ft. Contour Interval

0 660 1320

Scale is 1 inch = 660 feet

Kuiu Timber Sale Selected Alternative Unit Card

Unit Number:	209	**Unit Acres:**	64		
1999 Aerial Photo:	598_100, 598_101	**Land Use Designation:**	Timber Production	**Net Timber Volume:**	1,223 MBF
TM-Compartment and Stand:	3-132	**Volume Strata Acres:**	High 64 Medium 0 Low 0		

Existing Stand Condition: Old-growth

Silvicultural Prescription: Even-aged management, clearcut

Logging Method/ Transportation: Cable / One existing NFS Road (46096)

Resource Concerns & Responses

Fish Habitat/Watershed

Concern: Stream 1 is Class III, Channel Type HC5.
Stream 2 is Class IV, Channel Type HC5.

Response: Stream 1: No programmed commercial timber harvest within the RMA, which is defined as the V-notch. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.
Stream 2: Split yard away from Class IV streams whenever possible. Buck, limb, and top felled trees clear of streamcourses. Remove any slash deposited in streamcourse as a result of timber harvest activities.

Concern: Location makes this stand susceptible to windthrow.

Response: Streams 1 and 2: The riparian buffer will be protected by feathering the edge for a distance of 50 horizontal feet where trees are less than 16 inches DBH. Those trees that cannot be felled away from the buffer will be retained.

Soils

Concern: Evidence of past landslides uphill of Class 3 stream. Very steep slopes at V-notch, original design included 2 acres of extreme hazard soils (MMI-4).

Response: Extreme hazard soils (MMI-4) were removed from unit. No further soil concerns.

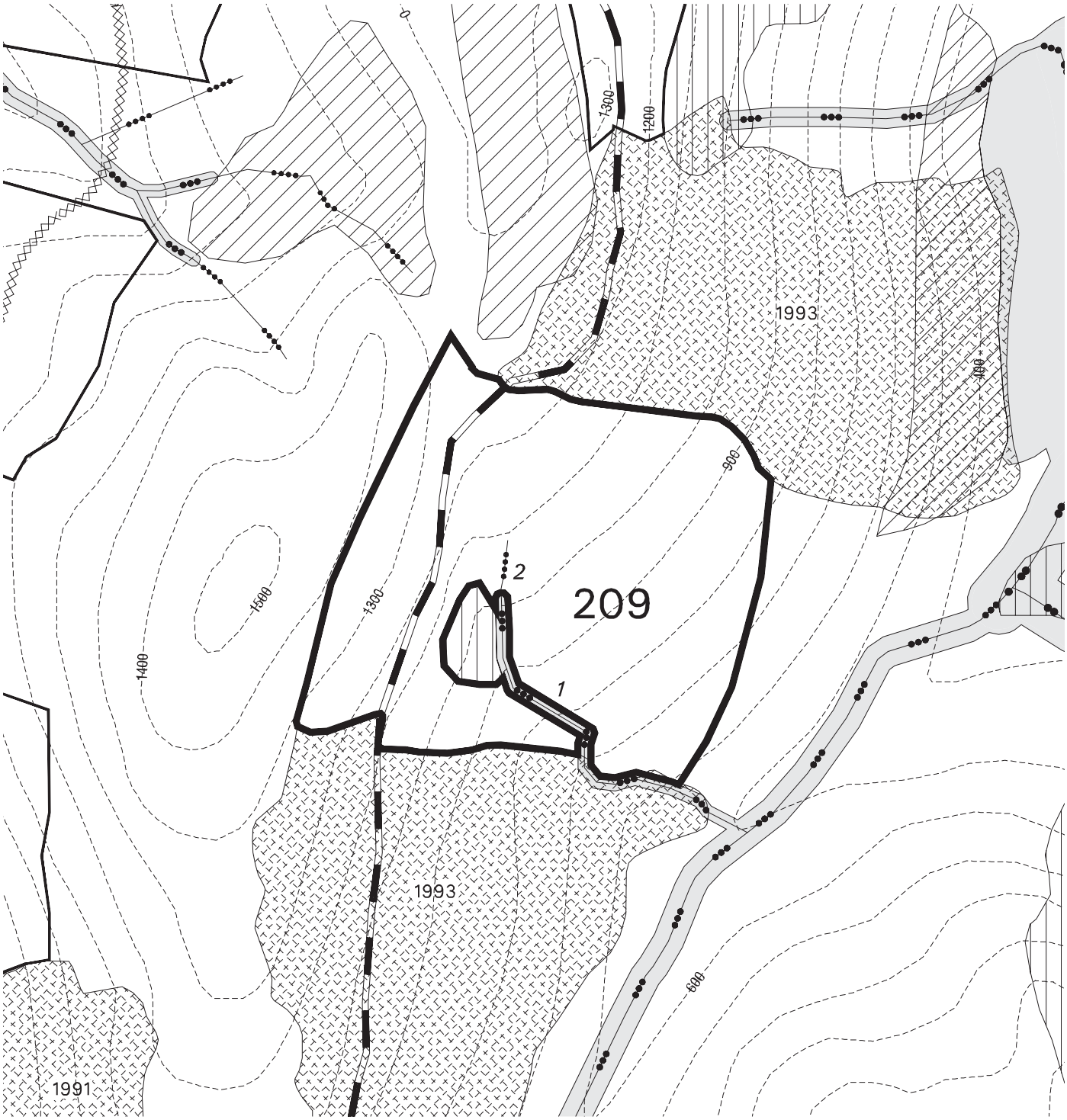
Wildlife/Biological Diversity

Concern: Black bear, red-breasted sapsucker activity and game trails were noted in the unit. Entire unit is comprised of high Volstrata. 11 acres of high value deer habitat (HSI >0.60), 19 acres of medium value deer habitat (HSI 0.40 to 0.50) and 64 acres of high value marten habitat (HSI >0.89) are located with the unit.

Response: Clearcut harvest will remove all old-growth and reduce deer and marten habitat values. High elevation habitat will be isolated and travel corridors will be removed.

No resource concerns for: Karst, Wetlands, Scenery, Heritage, Vegetation

Kuiu Record of Decision Unit 209



Existing Managed Stands
Riparian Management Area
Forest Plan Old-Growth Reserve
Extreme Hazard Soils
High Hazard Soils
Unit 209 Boundary
Adjacent Units
Stream Class I
Stream Class II
Stream Class III
Stream Class IV

Open NFS Roads
Closed NFS Roads
Decomissioned Roads
Selected NFS Roads
Reconditioned Roads
Selected Temporary Roads
100-ft. Contour Interval

0 660 1320

Scale is 1 inch = 660 feet

Kuiu Timber Sale Selected Alternative Unit Card

Unit Number:	210	**Unit Acres:**	48		
1999 Aerial Photo:	598_97, 98, 99	**Land Use Designation:**	Timber Production	**Net Timber Volume:**	1,437 MBF
TM-Compartment and Stand:	3-133	**Volume Strata Acres:**	High 44 Medium 4 Low 0		

Existing Stand Condition: Old-growth

Silvicultural Prescription: Even-aged management, clearcut

Logging Method/ Transportation: Cable / One temporary road and one existing NFS Road (46096)

Resource Concerns & Responses

Fish Habitat/Watershed

Concern: Stream 1 is Class III Channel Type HC2.
Streams 2, 3, 4, and 5 are Class IV, Channel Type HC2.

Response: Stream 1: No programmed commercial timber harvest within the RMA, which is defined as the V-notch. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.
Streams 2, 3, 4, and 5: Split yard away from Class IV streams whenever possible. Buck, limb, and top felled trees clear of streamcourses. Remove any slash deposited in streamcourse as a result of timber harvest activities. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.

Soils

Concern: Steep cliff area just southwest of unit

Response: Boundary located to avoid steep cliff areas.

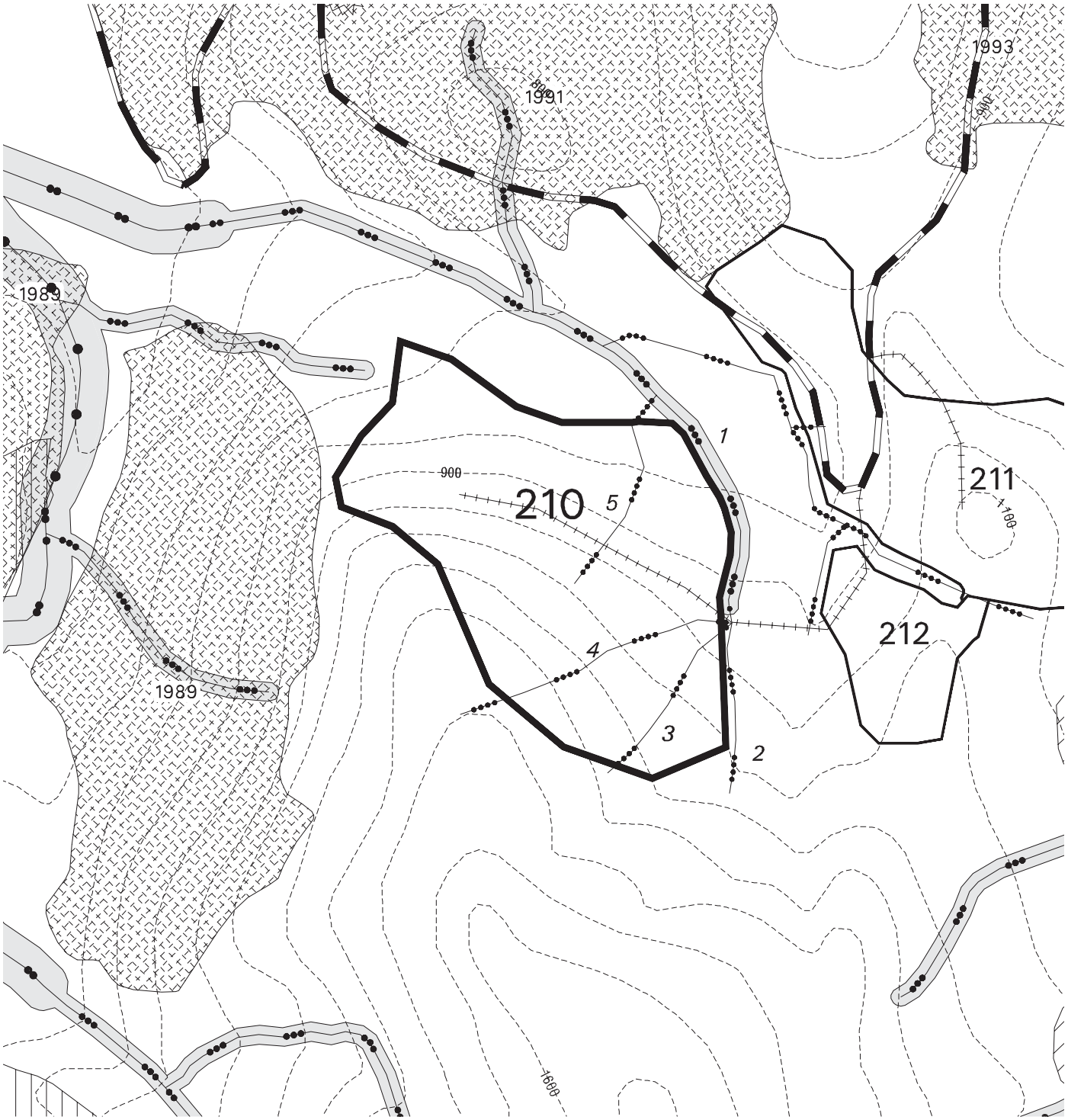
Wildlife/Biological Diversity

Concern: Large amount of high Volstrata reported in this unit. 5 acres of medium value deer habitat (HSI 0.40 to 0.50) and 42 acres of high value marten habitat (HSI >0.89) locate within unit.

Response: Harvest would not isolate habitat and no corridors would be removed.

No resource concerns for: Scenery, Heritage, Vegetation, Karst, Wetlands

Kuiu Record of Decision Unit 210



- Existing Managed Stands
- Riparian Management Area
- Forest Plan Old-Growth Reserve
- Extreme Hazard Soils
- High Hazard Soils
- Unit 210 Boundary
- Adjacent Units
- Stream Class I
- Stream Class II
- Stream Class III
- Stream Class IV
- Open NFS Roads
- Closed NFS Roads
- Decomissioned Roads
- Selected NFS Roads
- Reconditioned Roads
- Selected Temporary Roads
- 100-ft. Contour Interval

0 660 1320

Scale is 1 inch = 660 feet

Kuiu Timber Sale Selected Alternative Unit Card

Unit Number:	211	**Unit Acres:**	36		
1999 Aerial Photo:	598_97, 98, 99	**Land Use Designation:**	Timber Production	**Net Timber Volume:**	723 MBF
TM-Compartment and Stand:	3-134	**Volume Strata Acres:**	High 20 Medium 11 Low 5		

Existing Stand Condition: Old-growth

Silvicultural Prescription: Even-aged management, clearcut

Logging Method/ Transportation: Cable / One temporary road and one existing NFS Road (46096)

Resource Concerns & Responses

Fish Habitat/Watershed

Concern: Stream 1 is Class IV, Channel Type HC5.
Stream 2 is Class IV, Channel Type HC2.

Response: Streams 1 and 2: Split yard away from Class IV streams whenever possible. Buck, limb, and top felled trees clear of streamcourses. Remove any slash deposited in streamcourse as a result of timber harvest activities. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.

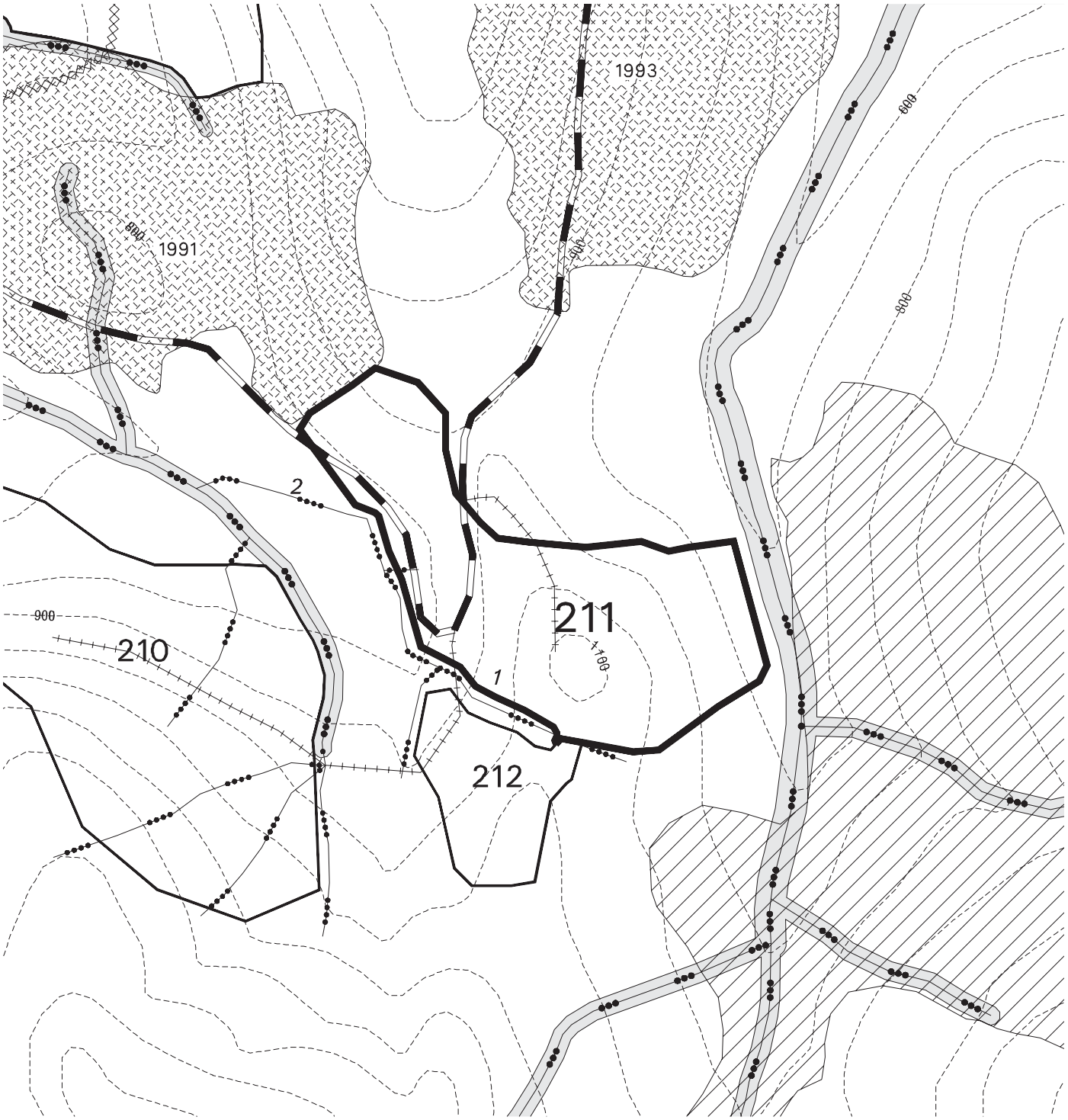
Wildlife/Biological Diversity

Concern: Large amount of high Volstrata reported in this unit. 2 acres of high value deer habitat (HSI >0.60), 6 acres of medium value deer habitat (HSI 0.40 to 0.50) and 20 acres of high value marten habitat (HSI >0.89) are located within unit.

Response: Harvest would not isolate habitat and no corridors would be removed.

No resource concerns for: Soils, Karst, Wetlands, Scenery, Heritage, Vegetation, Wildlife

Kuiu Record of Decision Unit 211



- Existing Managed Stands
- Riparian Management Area
- Forest Plan Old-Growth Reserve
- Extreme Hazard Soils
- High Hazard Soils
- Unit 211 Boundary
- Adjacent Units
- Stream Class I
- Stream Class II
- Stream Class III
- Stream Class IV
- Open NFS Roads
- Closed NFS Roads
- Decomissioned Roads
- Selected NFS Roads
- Reconditioned Roads
- Selected Temporary Roads
- 100-ft. Contour Interval

0 660 1320

Scale is 1 inch = 660 feet

Kuiu Timber Sale Selected Alternative Unit Card

Unit Number:	212	**Unit Acres:**	9		
1999 Aerial Photo:	598_97, 98, 99	**Land Use Designation:**	Timber Production	**Net Timber Volume:**	224 MBF
TM-Compartment and Stand:	3-135	**Volume Strata Acres:**	High 7 Medium 2 Low 0		

Existing Stand Condition: Old-growth

Silvicultural Prescription: Even-aged management, clearcut

Logging Method/ Transportation: Shovel / One temporary road

Resource Concerns & Responses

Fish Habitat/Watershed

Concern: Streams 1 and 2 are Class IV, Channel Type HC5.

Response: Streams 1 and 2: Split yard away from Class IV streams whenever possible. Buck, limb, and top felled trees clear of streamcourses. Remove any slash deposited in streamcourse as a result of timber harvest activities. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.

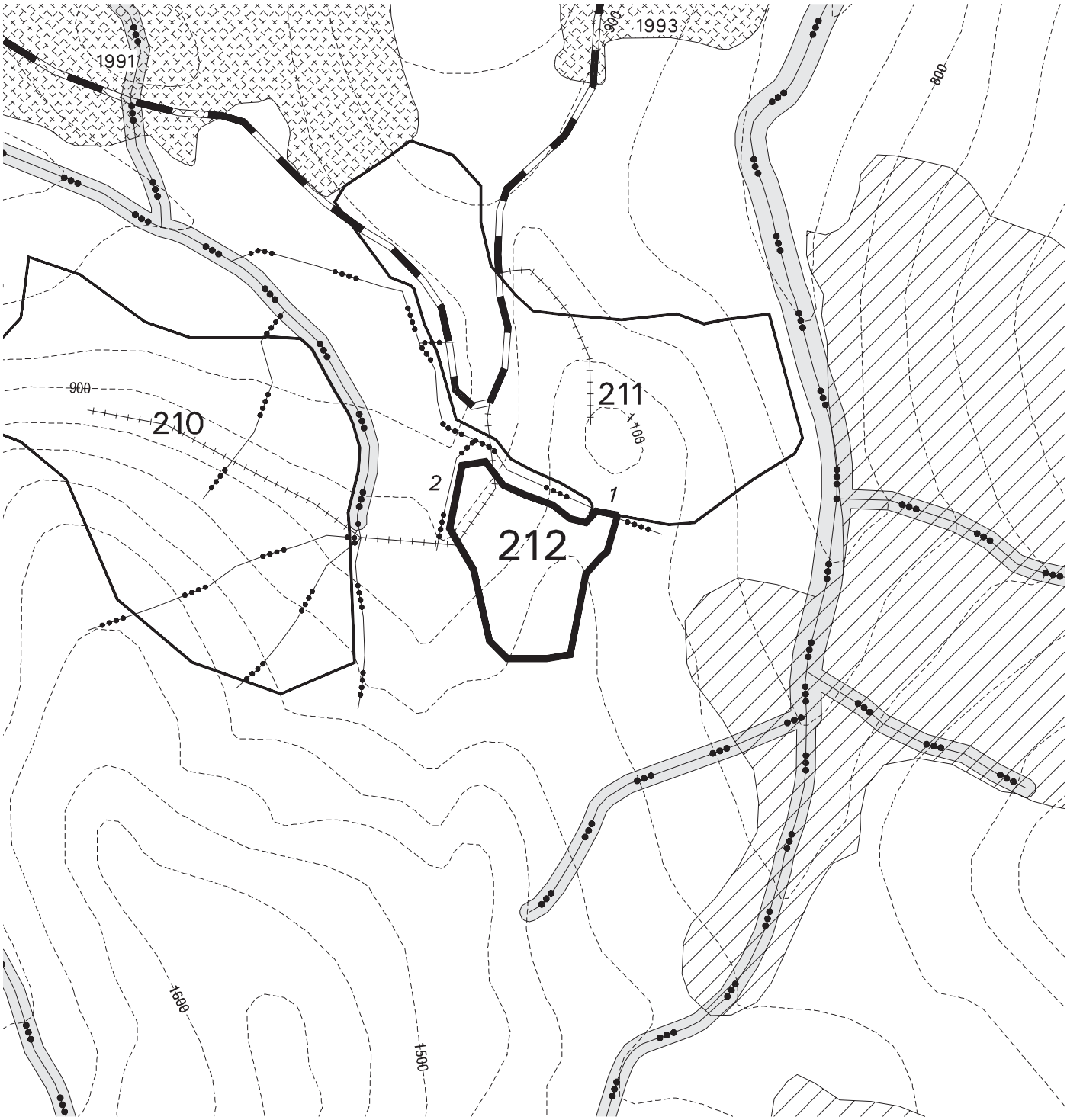
Wildlife/Biological Diversity

Concern: 6 acres of medium value deer habitat (HSI 0.40 to 0.50) and 7 acres of high value marten habitat (HSI >0.89) are within the unit.

Response: Harvest would not isolate habitat and no corridors would be removed.

No resource concerns for: Soils, Karst, Wetlands, Scenery, Heritage, Vegetation

Kuiu Record of Decision Unit 212



- Existing Managed Stands
- Riparian Management Area
- Forest Plan Old-Growth Reserve
- Extreme Hazard Soils
- High Hazard Soils
- Unit 212 Boundary
- Adjacent Units
- Stream Class I
- Stream Class II
- Stream Class III
- Stream Class IV
- Open NFS Roads
- Closed NFS Roads
- Decomissioned Roads
- Selected NFS Roads
- Reconditioned Roads
- Selected Temporary Roads
- 100-ft. Contour Interval

0 660 1320

Scale is 1 inch = 660 feet

Kuiu Timber Sale Selected Alternative Unit Card

Unit Number:	307	**Unit Acres:**	17		
1999 Aerial Photo:	598_132, 598_133	**Land Use Designation:**	Timber Production	**Net Timber Volume:**	288 MBF
TM-Compartment and Stand:	3-139	**Volume Strata Acres:**	High 8 Medium 9 Low 0		

Existing Stand Condition: Old-growth

Silvicultural Prescription: Even-aged management, clearcut

Logging Method/ Transportation: Cable / One temporary road and one existing NFS Road (46096)

Resource Concerns & Responses

Watershed/Fisheries

Concern: Stream 1 is Class III, Channel Type HC6.
Stream 2 is Class I MM2.

Response: Stream 1: No programmed commercial timber harvest within the RMA, which is defined as the V-notch. Implement BMPs 12.6, 12.6a, 13.9, and 13.16
Stream 2: No programmed commercial timber harvest in the RMA, which is defined as the greatest of the floodplain, riparian vegetation or soils, riparian associated wetland fens, or 120 feet. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.

Concern: Location makes this stand susceptible to windthrow.

Response: Streams 1 and 2: The riparian buffer will be protected by feathering the edge for a distance of 50 horizontal feet where trees are less than 16 inches DBH. Trees that cannot be felled away from the buffer will be retained.

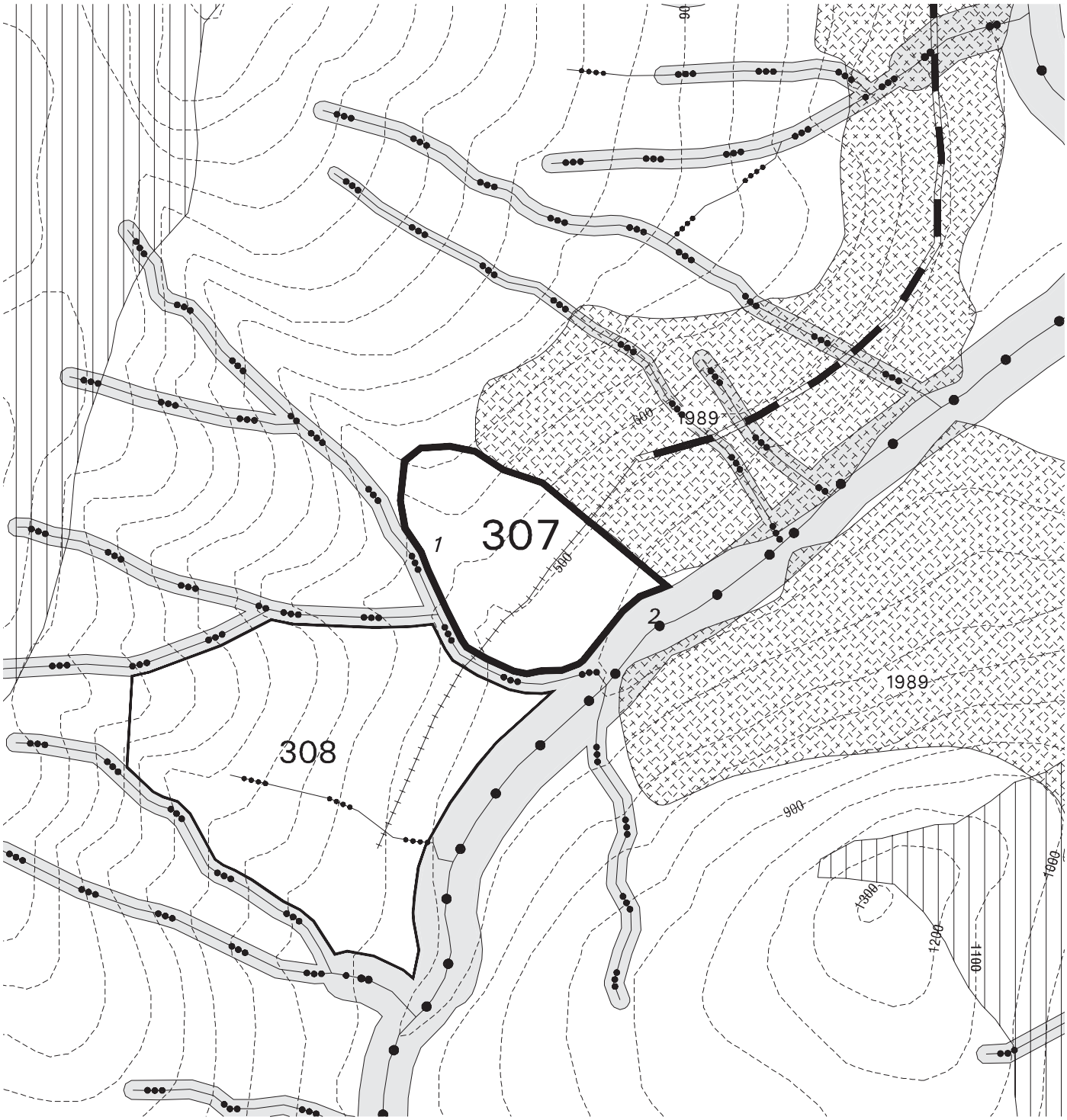
Wildlife/Biological Diversity

Concern: Large amount of high and medium Volstrata in unit. 8 acres of high value deer habitat (HSI >0.60) and 8 acres of high value marten habitat (HSI >0.89) are within the unit.

Response: Harvest would not isolate habitat and no corridors would be removed.

No resource concerns for: Soils, Wetlands, Karst, Scenery, Heritage, Vegetation

Kuiu Record of Decision Unit 307



Existing Managed Stands
Riparian Management Area
Forest Plan Old-Growth Reserve
Extreme Hazard Soils
High Hazard Soils
Unit 307 Boundary
Adjacent Units
Stream Class I
Stream Class II
Stream Class III
Stream Class IV

Open NFS Roads
Closed NFS Roads
Decomissioned Roads
Selected NFS Roads
Reconditioned Roads
Selected Temporary Roads
100-ft. Contour Interval

0 660 1320

Scale is 1 inch = 660 feet

Kuiu Timber Sale Selected Alternative Unit Card

Unit Number:	308	**Unit Acres:**	39		
1999 Aerial Photo:	298_126, 298_127	**Land Use Designation:**	Timber Production	**Net Timber Volume:**	297 MBF
TM-Compartment and Stand:	3-140	**Volume Strata Acres:**	High 6 Medium 33 Low 0		

Existing Stand Condition: Old-growth

Silvicultural Prescription: Even-aged management, clearcut

Logging Method/ Transportation: Cable and Shovel / One temporary road

Resource Concerns & Responses

Fish Habitat/Watershed

Concern: Streams 1, 2, and 4 are Class III, Channel Type HC6.
Stream 3 is Class IV Channel Type HC5.
Stream 5 is Class II Channel Type HC6.
Stream 6 is Class I Channel Type MM2.

Response: Streams 1, 2, and 4: No programmed commercial timber harvest within the RMA, which is defined as the V-notch. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.
Stream 3: Split yard away from Class IV streams whenever possible. Buck, limb, and top felled trees clear of streamcourses. Remove any slash deposited in streamcourse as a result of timber harvest activities. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.
Stream 5: No programmed commercial timber harvest within the RMA, which is defined as within 100 feet of the stream or to the top of the V-notch, whichever is greater. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.
Stream 6: No programmed commercial timber harvest in the RMA, which is defined as the greatest of the flood plain, riparian vegetation or soils, riparian associated wetland fens, or 120 feet. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.

Concern: Temporary road crosses a Class III stream.

Response: Implement BMPs 12.17, 14.17, 14.5, 14.6, 14.8, 14.9, 14.12, 14.14, 14.15

Concern: Location makes this stand susceptible to windthrow.

Response: Streams 1, 2, 4, 5 and 6: The riparian buffer will be protected by feathering the edge for a distance of 50 horizontal feet where trees are less than 16 inches DBH. Trees that cannot be felled away from the buffer will be retained.

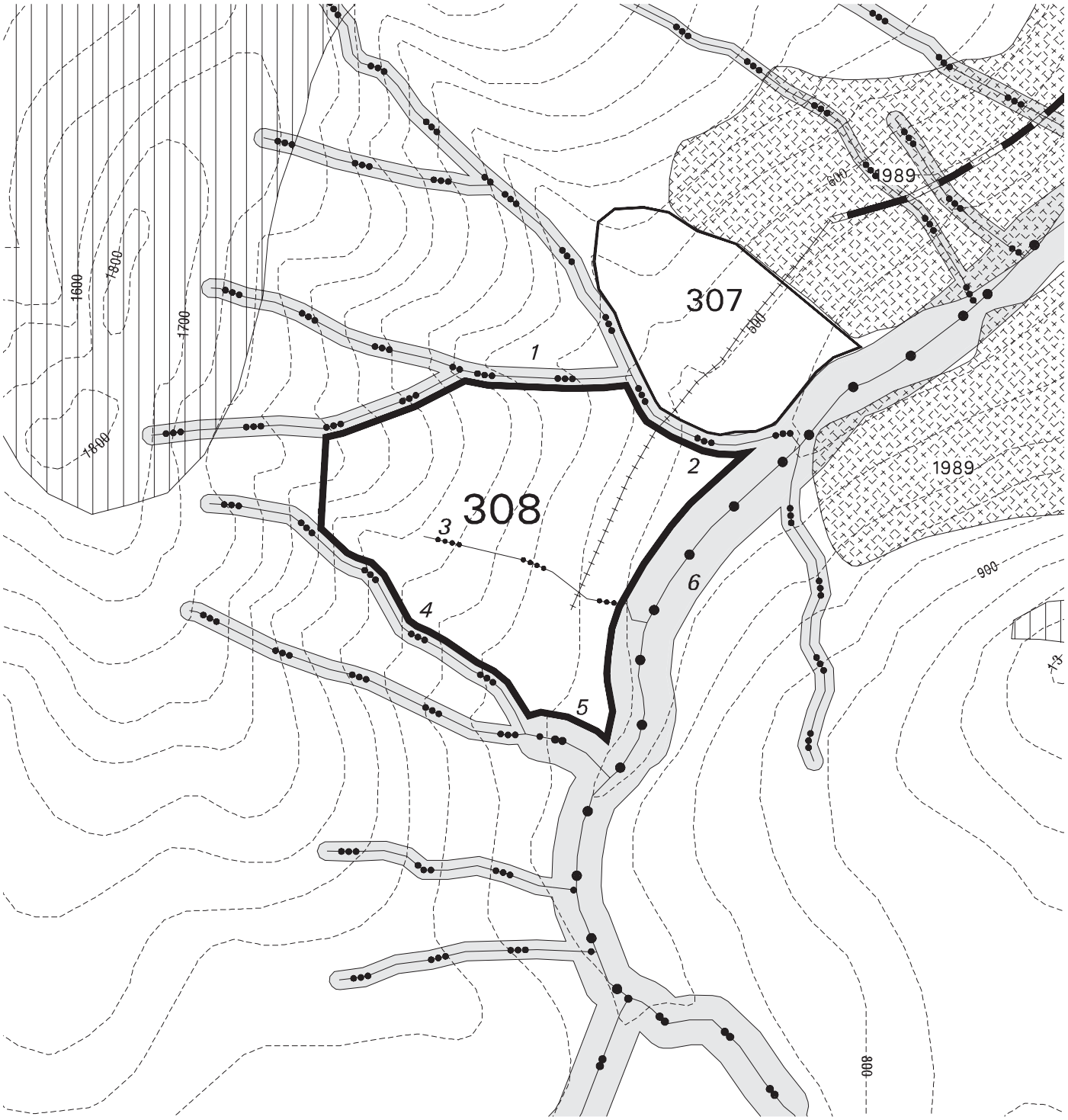
Wildlife/Biological Diversity

Concern: Large amount of medium Volstrata in unit. 5 acres of high value deer habitat (HSI >0.60) and 5 acres of high value marten habitat (HSI >0.89) are within the unit.

Response: Harvest would not isolate habitat and no corridors would be removed.

No resource concerns for: Soils, Wetlands, Karst, Scenery, Heritage, Vegetation

Kuiu Record of Decision Unit 308



Existing Managed Stands
Riparian Management Area
Forest Plan Old-Growth Reserve
Extreme Hazard Soils
High Hazard Soils
Unit 308 Boundary
Adjacent Units
Stream Class I
Stream Class II
Stream Class III
Stream Class IV

Open NFS Roads
Closed NFS Roads
Decomissioned Roads
Selected NFS Roads
Reconditioned Roads
Selected Temporary Roads
100-ft. Contour Interval

0 660 1320

Scale is 1 inch = 660 feet

Kuiu Timber Sale Selected Alternative Unit Card

Unit Number:	401	**Unit Acres:**	20		
1999 Aerial Photo:	198_72, 198_73	**Land Use Designation:**	Timber Production	**Net Timber Volume:**	653 MBF
TM-Compartment and Stand:	2-127	**Volume Strata Acres:**	High 20 Medium 0 Low 0		

Existing Stand Condition: Old-growth

Silvicultural Prescription: Even-aged management, clearcut

Logging Method/ Transportation: Cable / Two reconditioned NFS Roads (6417 and 6422)

Resource Concerns & Responses

Watershed/Fisheries

Concern: Stream 1 is Class I, Channel Type MM1.
Stream 2 is Class II, Channel Type HC3.
Stream 3 is Class III, Channel Type HC6.

Response: Stream 1: No programmed commercial timber harvest in the RMA, which is defined as the greatest of the flood plain, riparian vegetation or soils, riparian associated wetland fens, or 120 feet. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.
Stream 2: No programmed commercial timber harvest within the RMA, which is defined as within 100 feet of the stream or to the top of the V-notch, whichever is greater. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.
Stream 3: No programmed commercial timber harvest within the RMA, which is defined as the V-notch. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.

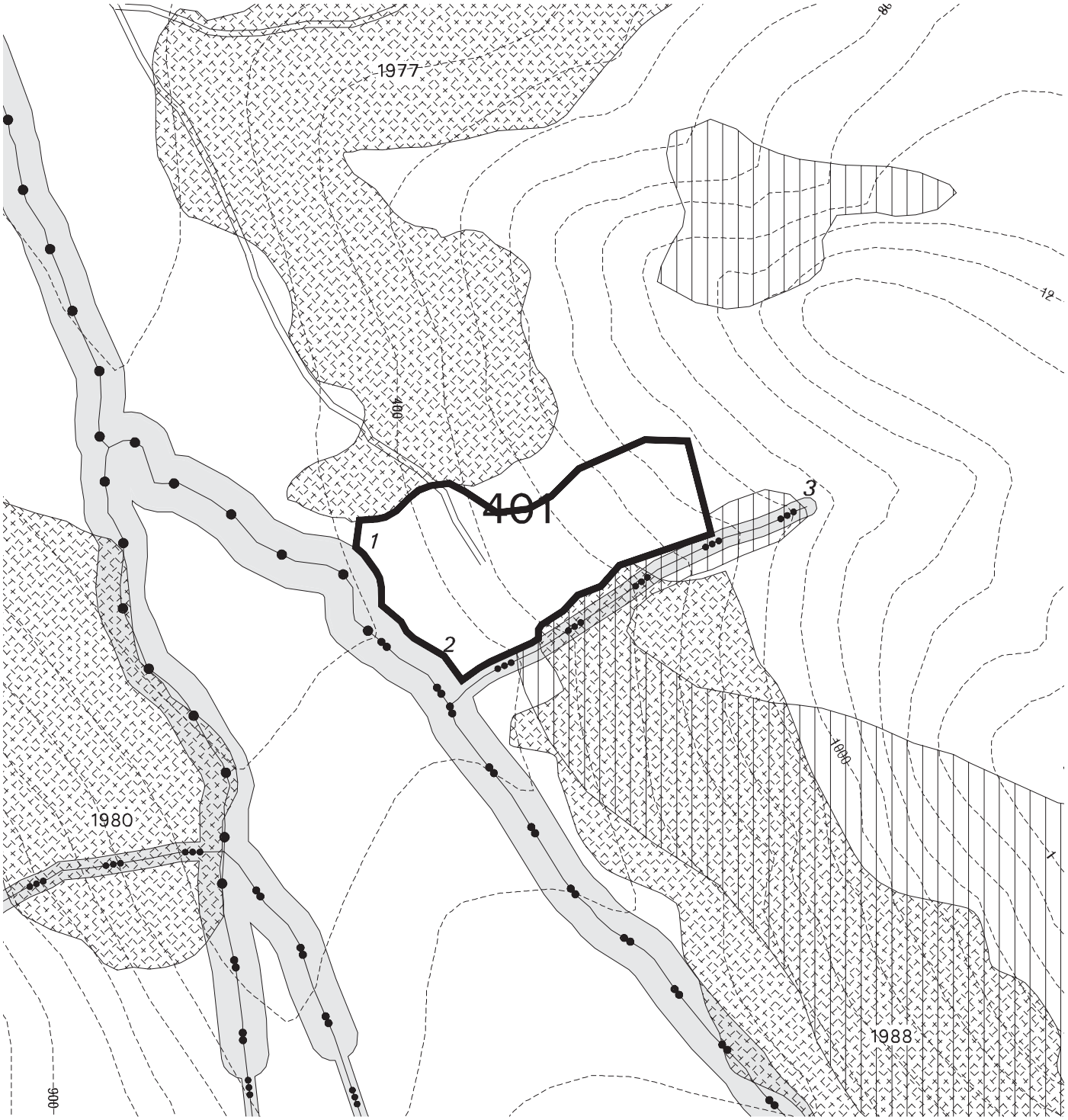
Wildlife/Biological Diversity

Concern: Unit is a wildlife corridor between two existing clearcuts. A large amount of high Volstrata will be harvested. 17 acres of high value deer habitat (HSI >0.60), 3 acres of medium value deer habitat (HSI 4.0 to 5.0) and 20 acres of high value marten habitat (HSI >0.89) are within the unit.

Response: Concern not addressed. Clearcut harvest will remove wildlife corridor.

No resource concerns for: Soils, Scenery, Heritage, Vegetation, Karst, Wetlands

Kuiu Record of Decision Unit 401



Existing Managed Stands
Riparian Management Area
Forest Plan Old-Growth Reserve
Extreme Hazard Soils
High Hazard Soils
Unit 401 Boundary
Adjacent Units
Stream Class I
Stream Class II
Stream Class III
Stream Class IV

Open NFS Roads
Closed NFS Roads
Decomissioned Roads
Selected NFS Roads
Reconditioned Roads
Selected Temporary Roads
100-ft. Contour Interval

0 660 1320

Scale is 1 inch = 660 feet

Kuiu Timber Sale Selected Alternative Unit Card

Unit Number:	402	**Unit Acres:**	24		
1999 Aerial Photo:	298_129, 298_130	**Land Use Designation:**	Timber Production	**Net Timber Volume:**	659 MBF
TM-Compartment and Stand:	6-36	**Volume Strata Acres:**	High 19 Medium 3 Low 2		

Existing Stand Condition: Old-growth

Silvicultural Prescription: Even-aged management, clearcut

Logging Method/ Transportation: Cable / One new NFS Road (46030)

Resource Concerns & Responses

Fish Habitat/Watershed

Concern: Streams 1, 2, and 4 are Class IV, Channel Type HC5.
Stream 3 is Class IV, Channel Type HC2.
Stream 5 is Class II, Channel Type HC2.
Stream 6 is Class III, Channel Type HC2.

Response: Streams 1, 2, 3, and 4: Split yard away from Class IV streams whenever possible. Buck, limb, and top felled trees clear of streamcourses. Remove any slash deposited in streamcourse as a result of timber harvest activities. Implement BMPs 12.6, 12.6a. 13.9, and 13.16.
Stream 5: No programmed commercial timber harvest within the RMA, which is defined as within 100 feet of the stream or to the top of the V-notch, whichever is greater. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.
Stream 6: No programmed commercial timber harvest within the RMA, which is

Concern: defined as the V-notch. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.

Response: Access road would cross a Class II stream.
Install a log stringer bridge. Designate location of stream crossing and minimize stream channel disturbance from road construction/storage (BMPs 14.14, 14.17).

Wetlands

Concern: Forested wetland exists in the unit.

Response: Suitable for cable harvest with partial suspension, too wet for shovel.

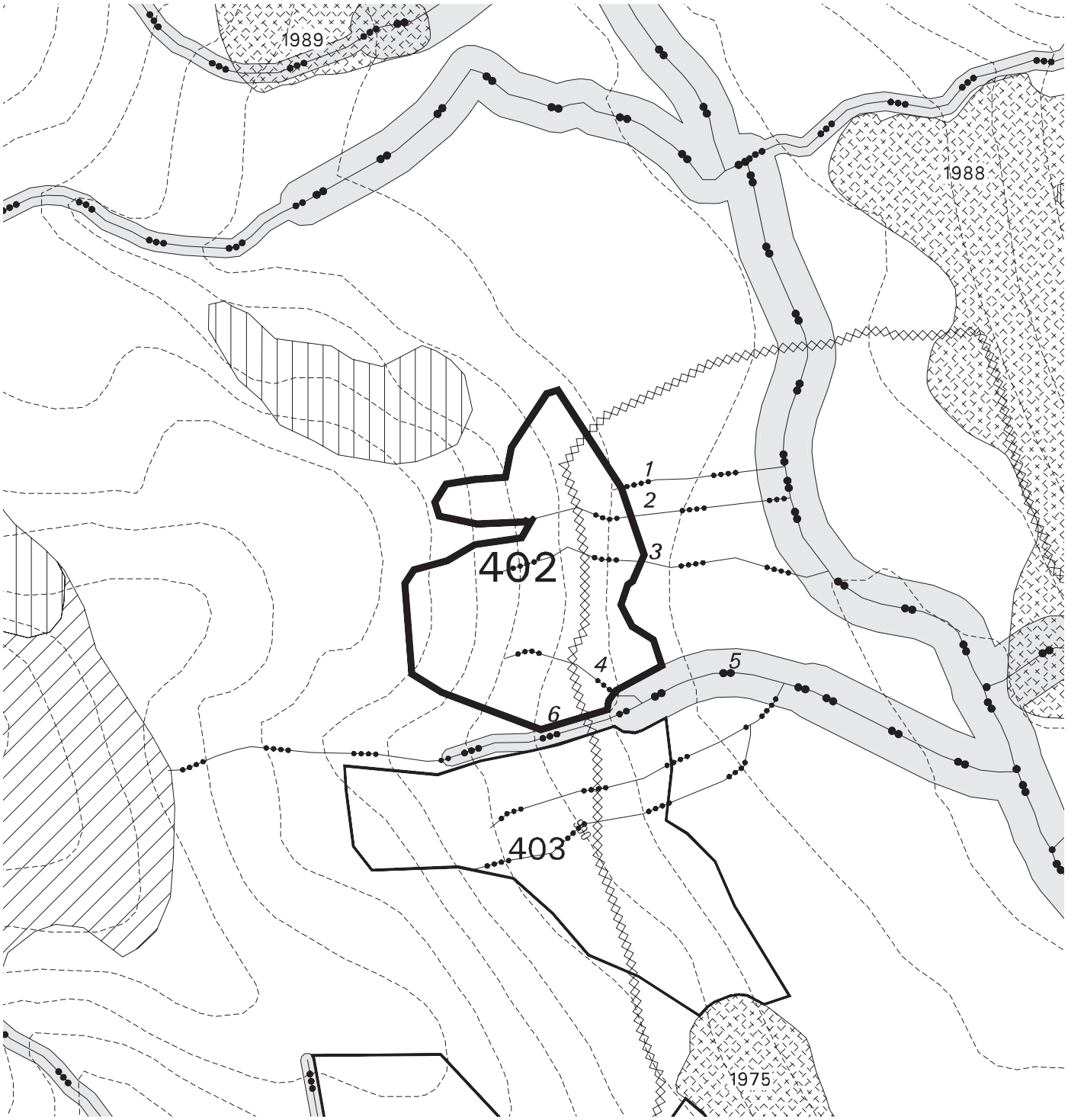
Wildlife/Biological Diversity

Concern: Unit is potential wildlife travel corridor. Large amount of high Volstrata will be harvested in this unit. 1 acre of high value deer habitat (HSI >0.60) and 19 acres of high value marten habitat (HSI >0.89) are within the unit.

Response: Concern not addressed. Clearcut harvest will reduce wildlife travel corridor.

No resource concerns for: Scenery, Heritage, Vegetation, Soils, Karst

Kuiu Record of Decision Unit 402



Existing Managed Stands
Riparian Management Area
Forest Plan Old-Growth Reserve
Extreme Hazard Soils
High Hazard Soils
Unit 402 Boundary
Adjacent Units
Stream Class I
Stream Class II
Stream Class III
Stream Class IV

Open NFS Roads
Closed NFS Roads
Decomissioned Roads
Selected NFS Roads
Reconditioned Roads
Selected Temporary Roads
100-ft. Contour Interval

0 660 1320

Scale is 1 inch = 660 feet

Kuiu Timber Sale Selected Alternative Unit Card

Unit Number:	403	**Unit Acres:**	29		
1999 Aerial Photo:	298_129, 130, 131	**Land Use Designation:**	Timber Production	**Net Timber Volume:**	857 MBF
TM-Compartment and Stand:	6-137	**Volume Strata Acres:**	High 26 Medium 3 Low 0		

Existing Stand Condition: Old-growth

Silvicultural Prescription: Even-aged management, clearcut

Logging Method/ Transportation: Cable / One new NFS Road (46030)

Resource Concerns & Responses

Fish Habitat/Watershed

Concern:	Streams 1 and 5 are Class IV, Channel Type HC5. Stream 2 is Class III, Channel Type HC2. Stream 4 is Class IV, Channel Type HC2. Stream 3 is Class II, Channel Type HC2.
Response:	Streams 1, 4, and 5: Split yard away from class IV streams whenever possible. Buck, limb, and top felled trees clear of streamcourses. Remove any slash deposited in streamcourse as a result of timber harvest activities. Implement BMPs 12.6, 12.6a, 13.9, and 13.16. Stream 2: No programmed commercial timber harvest within the RMA, which is defined as the V-notch. Implement BMPs 12.6, 12.6a, 13.9, and 13.16. Stream 3: No programmed commercial timber harvest within the RMA, which is defined as within 100 feet of the stream or to the top of the V-notch, whichever is greater. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.
Concern:	Access road would cross a Class II stream.
Response:	Install a log stringer bridge. Designate location of stream crossing and minimize stream channel disturbance from road construction/storage (BMPs 14.14, 14.17).

Wetlands

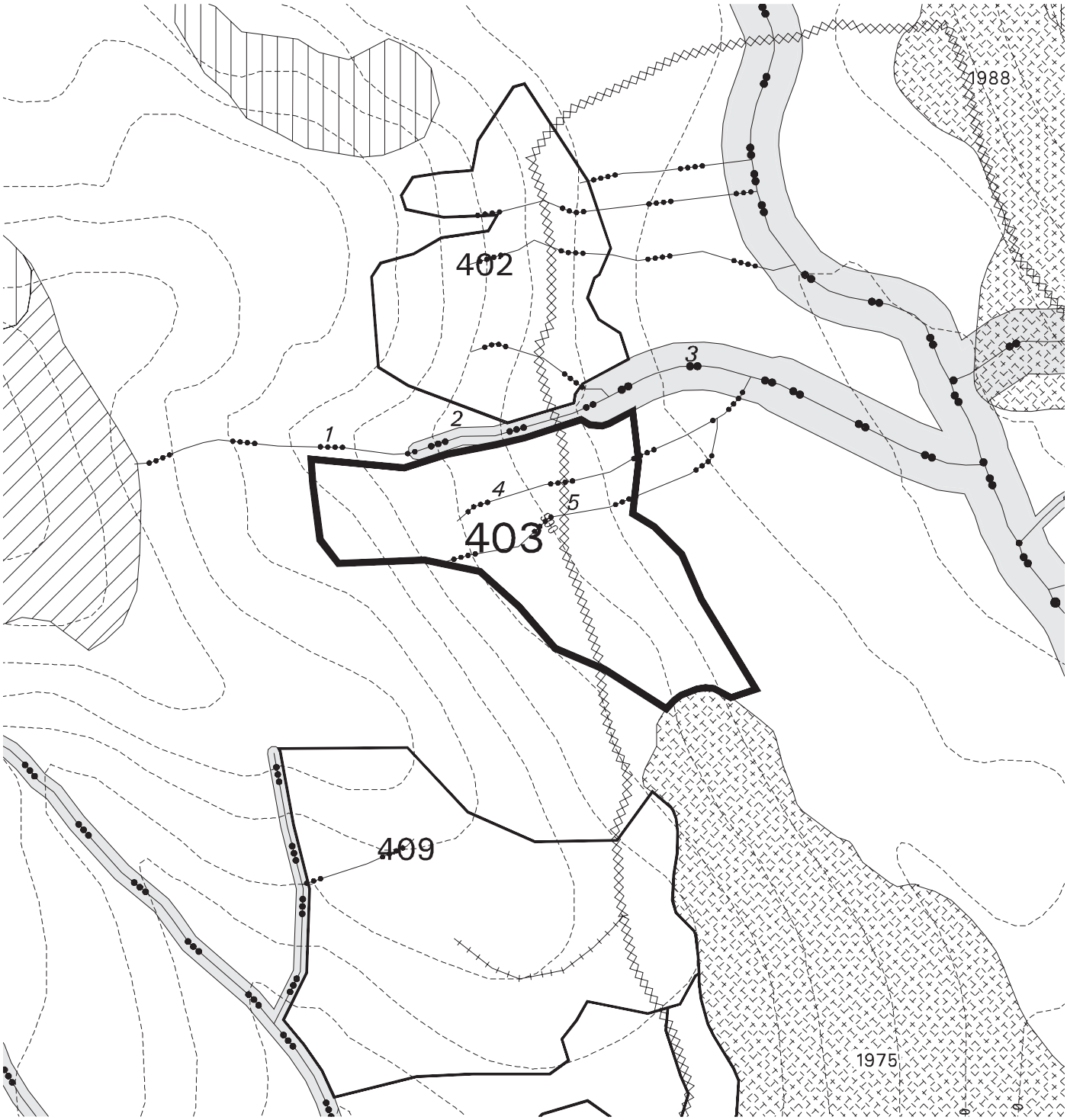
Concern:	Forested wetland exists in the unit
Response:	Suitable for cable harvest with partial suspension, too wet for shovel.
Concern:	Road crosses wetlands.
Response:	Follow BMPs when constructing road in wetland (examples include, minimizing road width and deep placement of culverts).

Wildlife/Biological Diversity

Concern:	Large amount of high Volstrata will be harvested in this unit. 6 acres of high value deer habitat (HSI >0.60) and 26 acres of high value marten habitat (HSI >0.89) are within the unit.
Response:	Harvest will not isolate habitat and corridors will not be removed.

No resource concerns for: Scenery, Heritage, Vegetation, Soils, Karst

Kuiu Record of Decision Unit 403



Existing Managed Stands
Riparian Management Area
Forest Plan Old-Growth Reserve
Extreme Hazard Soils
High Hazard Soils
Unit 403 Boundary
Adjacent Units
Stream Class I
Stream Class II
Stream Class III
Stream Class IV

Open NFS Roads
Closed NFS Roads
Decomissioned Roads
Selected NFS Roads
Reconditioned Roads
Selected Temporary Roads
100-ft. Contour Interval

0 660 1320

Scale is 1 inch = 660 feet

Kuiu Timber Sale Selected Alternative Unit Card

Unit Number:	404	**Unit Acres:**	28		
1999 Aerial Photo:	598_136, 598_137	**Land Use Designation:**	Timber Production	**Net Timber Volume:**	770 MBF
TM-Compartment and Stand:	6-38	**Volume Strata Acres:**	High 23 Medium 4 Low 1		

Existing Stand Condition: Old-growth

Silvicultural Prescription: Even-aged management, clearcut

Logging Method/ Transportation: Cable / One new NFS Road (46030)

Resource Concerns & Responses

Fish Habitat/Watershed

Concern: Stream 1 is Class IV, Channel Type HC5.
Stream 2 is Class III, Channel Type HC2.
Stream 3 is Class I, Channel Type MC2.
Stream 4 is Class IV, Channel Type HC5.

Response: Stream 1 and 4: Split yard away from Class IV streams whenever possible. Buck, limb, and top felled trees clear of streamcourses. Remove any slash deposited in streamcourse as a result of timber harvest activities. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.
Stream 2: No programmed commercial timber harvest within the RMA, which is defined as the V-notch. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.
Stream 3: No programmed commercial timber harvest within the RMA, which is defined as within 100 feet of the channel, or to the top of the side-slope break, whichever is greater. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.

Concern:

Response: Location makes this stand susceptible to windthrow.
Streams 2 and 3: The riparian buffer will be protected by feathering the edge for a distance of 50 horizontal feet where trees are less than 16 inches DBH. Those trees that cannot be felled away from the buffer will be retained.

Wetlands

Concern: Forested wetland exists in the unit.

Response: Suitable for cable harvest with partial suspension, too wet for shovel.

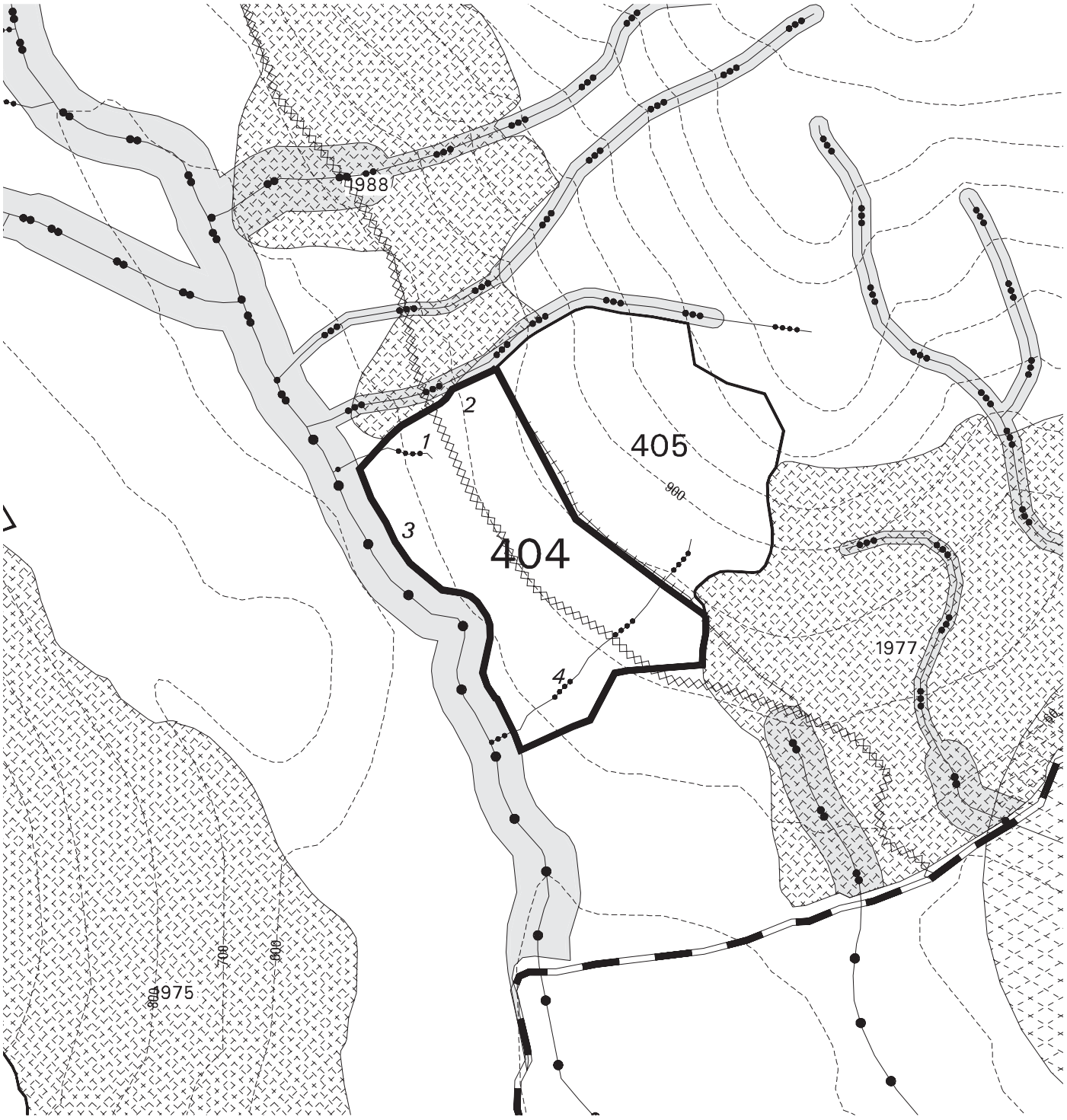
Wildlife/Biological Diversity

Concern: Unit includes portion of a corridor between two existing managed stands. High and medium Volstrata are within the unit. 21 acres of high value deer habitat (HSI >0.60), 4 acres of medium value deer habitat (HSI 4.0-5.0) and 23 acres of high value marten habitat (HSI >0.89) are within the unit.

Response: Clearcut harvest will remove the corridor and impact old-growth, deer and marten habitat.

No resource concerns for: Scenery, Heritage, Vegetation, Soils, Karst

Kuiu Record of Decision Unit 404



- Existing Managed Stands
- Riparian Management Area
- Forest Plan Old-Growth Reserve
- Extreme Hazard Soils
- High Hazard Soils
- Unit 404 Boundary
- Adjacent Units
- Stream Class I
- Stream Class II
- Stream Class III
- Stream Class IV
- Open NFS Roads
- Closed NFS Roads
- Decomissioned Roads
- Selected NFS Roads
- Reconditioned Roads
- Selected Temporary Roads
- 100-ft. Contour Interval

0 660 1320

Scale is 1 inch = 660 feet

Kuiu Timber Sale Selected Alternative Unit Card

Unit Number:	405	**Unit Acres:**	25		
1999 Aerial Photo:	598_136, 598_137	**Land Use Designation:**	Timber Production	**Net Timber Volume:**	820 MBF
TM-Compartment and Stand:	6-39	**Volume Strata Acres:**	High 25 Medium 0 Low 0		

Existing Stand Condition: Old-growth

Silvicultural Prescription: Even-aged management, clearcut

Logging Method/ Transportation: Cable / One new NFS Road (46030) and one temporary road

Resource Concerns & Responses

Fish Habitat/Watershed

Concern: Stream 1 is Class III, Channel Type HC2.
Stream 2 is Class IV, Channel Type HC5.

Response: Stream 1: No programmed commercial timber harvest within the RMA, which is defined as the V-notch. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.
Stream 2: Split yard away from Class IV streams whenever possible. Buck, limb, and top felled trees clear of streamcourses. Remove any slash deposited in streamcourse as a result of timber harvest activities. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.

Concern: Location makes stand susceptible to windthrow.

Response: Stream 1: The riparian buffer will be protected by feathering the edge for a distance of 50 horizontal feet where trees are less than 16 inches DBH. Trees that cannot be felled away from the buffer will be retained.

Wetlands

Concern: Forested wetland exists in the unit.

Response: Suitable for cable harvest with partial suspension, too wet for shovel.

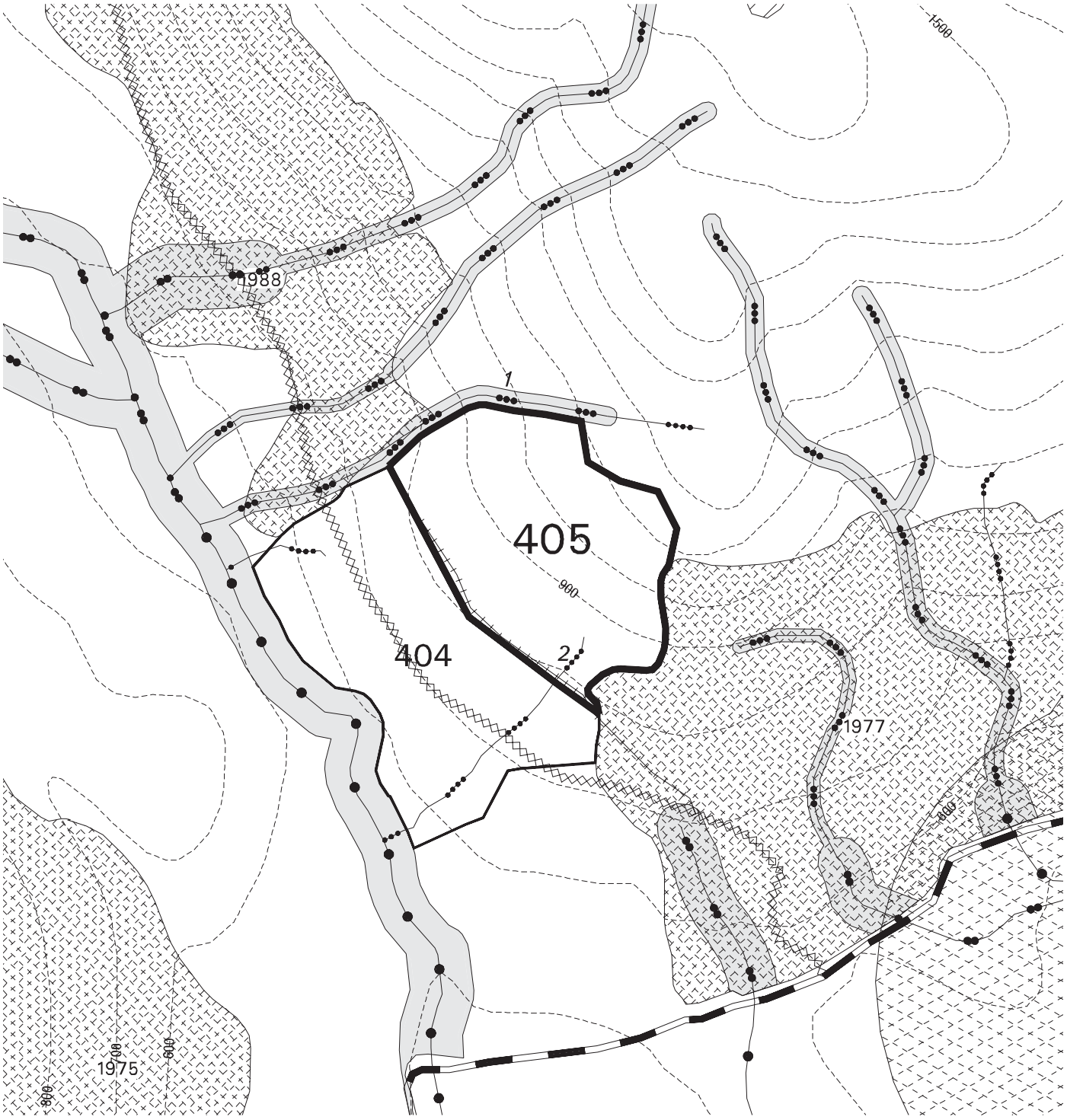
Wildlife/Biological Diversity

Concern: This unit linked with unit 404 is a wildlife corridor between two previously harvested units. High Volstrata will be harvested in this unit. Less than one acre of high value deer habitat (HSI >0.60), 25 acres of medium value deer habitat (HSI 4.0-5.0) and 25 acres of high value marten habitat (HSI >0.89) will be harvested within this unit.

Response: Clearcut harvest will remove the corridor and impact old-growth, deer and marten habitat.

No resource concerns for: Soils, Karst**,** Scenery, Heritage, Vegetation

Kuiu Record of Decision Unit 405



- Existing Managed Stands
- Riparian Management Area
- Forest Plan Old-Growth Reserve
- Extreme Hazard Soils
- High Hazard Soils
- Unit 405 Boundary
- Adjacent Units
- Stream Class I
- Stream Class II
- Stream Class III
- Stream Class IV
- Open NFS Roads
- Closed NFS Roads
- Decomissioned Roads
- Selected NFS Roads
- Reconditioned Roads
- Selected Temporary Roads
- 100-ft. Contour Interval

0 660 1320

Scale is 1 inch = 660 feet

Kuiu Timber Sale Selected Alternative Unit Card

Unit Number:	409	**Unit Acres:**	46		
1999 Aerial Photo:	298_130, 131, 132	**Land Use Designation:**	Timber Production	**Net Timber Volume:**	1,325 MBF
TM-Compartment and Stand:	6-40 & 7-121	**Volume Strata Acres:**	High 40 Medium 6 Low 0		

Existing Stand Condition: Old-growth

Silvicultural Prescription: Even-aged management, clearcut

Logging Method/ Transportation: Shovel / One temporary road and one new NFS Road (46030)

Resource Concerns & Responses

Fish Habitat/Watershed

Concern: Stream 1 is Class III, Channel Type HC5.
Stream 2 is Class IV, Channel Type HC5.
Stream 3 is Class III, Channel Type HC6.

Response: Streams 1 and 3: No programmed commercial timber harvest within the RMA, which is defined as the V-notch. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.
Stream 2: Split yard away from Class IV streams whenever possible. Buck, limb, and top felled trees clear of streamcourses. Remove any slash deposited in streamcourse as a result of timber harvest activities. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.

Concern: Location makes this stand susceptible to windthrow.

Response: The riparian buffer will be protected by feathering the edge for a distance of 50 horizontal feet where trees are less than 16 inches DBH. Trees that cannot be felled away from the buffer will be retained.

Concern: Access road would cross a Class II stream.

Response: Install a log stringer bridge. Designate location of stream crossing and minimize stream channel disturbance from road construction/storage (BMPs 14.14, 14.17).

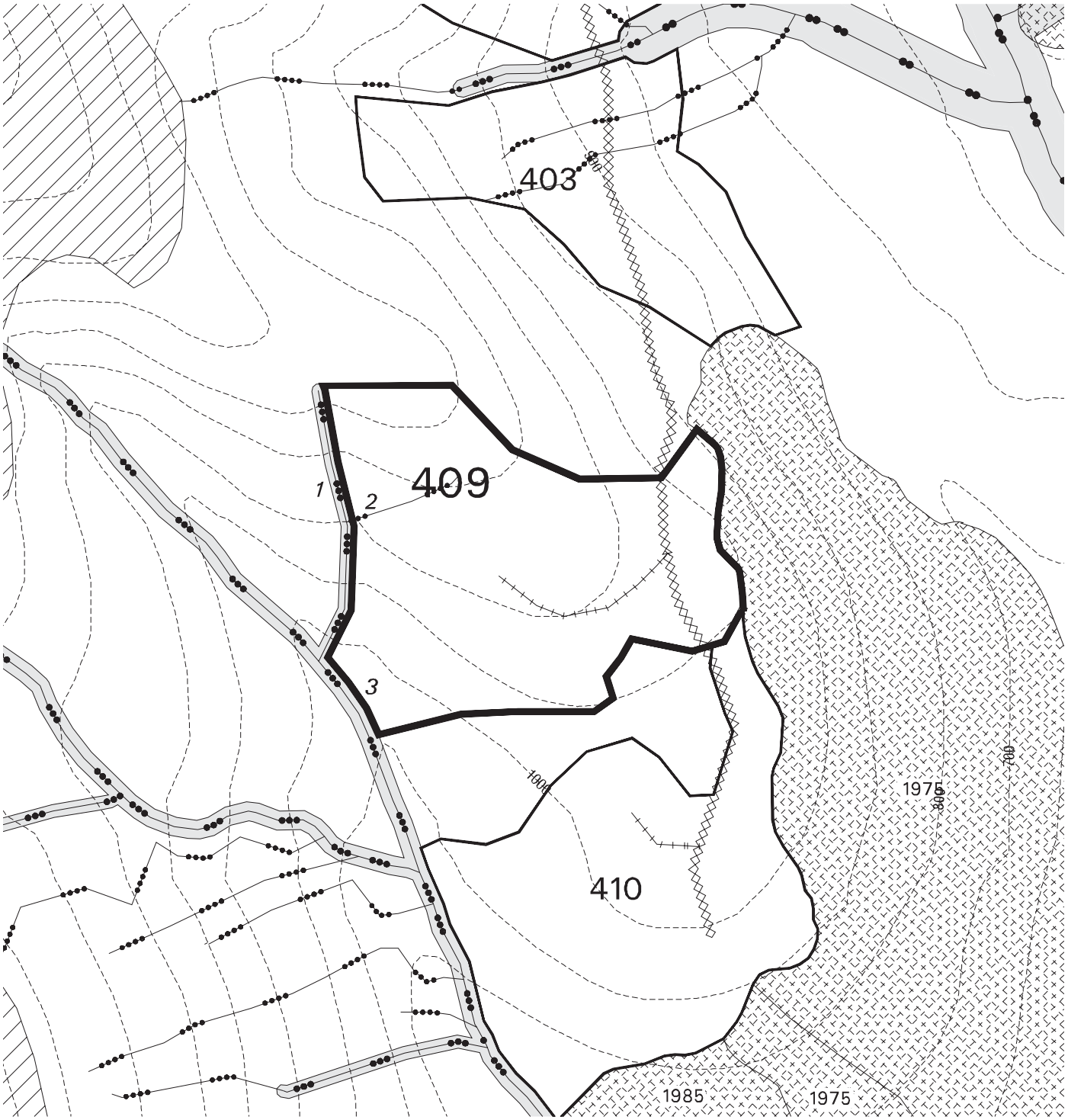
Wildlife/Biological Diversity

Concern: Wildlife corridor between two previously harvested units. High and medium Volstrata occur within this unit. 27 acres of medium value deer habitat (HSI 4.0-5.0) and 40 acres of high value marten habitat (HSI >0.89) occur within this unit.

Response: Clearcut harvest in will remove travel corridor and high and medium value deer and marten habitat.

No resource concerns for: Soils, Wetlands, Karst, Scenery, Heritage, Vegetation

Kuiu Record of Decision Unit 409



Existing Managed Stands
Riparian Management Area
Forest Plan Old-Growth Reserve
Extreme Hazard Soils
High Hazard Soils
Unit 409 Boundary
Adjacent Units
Stream Class I
Stream Class II
Stream Class III
Stream Class IV

Open NFS Roads
Closed NFS Roads
Decomissioned Roads
Selected NFS Roads
Reconditioned Roads
Selected Temporary Roads
100-ft. Contour Interval

0 660 1320

Scale is 1 inch = 660 feet

Kuiu Timber Sale Selected Alternative Unit Card

Unit Number:	410	**Unit Acres:**	45		
1999 Aerial Photo:	298_130, 131, 132	**Land Use Designation:**	Timber Production	**Net Timber Volume:**	996 MBF
TM-Compartment and Stand:	6-41 & 7-122	**Volume Strata Acres:**	High 29 Medium 15 Low 1		

Existing Stand Condition: Old-growth

Silvicultural Prescription: Even-aged management, clearcut

Logging Method/ Transportation: Cable / One temporary road and one new NFS Road (46030)

Resource Concerns & Responses

Fish Habitat/Watershed

Concern: Stream 1 is Class III, Channel Type HC6.

Response: No programmed commercial timber harvest within the RMA, which is defined as the V-notch. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.

Concern: Location makes this stand susceptible to windthrow.

Response: Stream 1: The riparian buffer will be protected by feathering the edge for a distance of 50 horizontal feet where trees are less than 16 inches DBH. Trees that cannot be felled away from the buffer will be retained.

Concern: Access road would cross a Class II stream.

Response: Install a log stringer bridge. Designate location of stream crossing and minimize stream channel disturbance from road construction/storage (BMPs 14.14, 14.17).

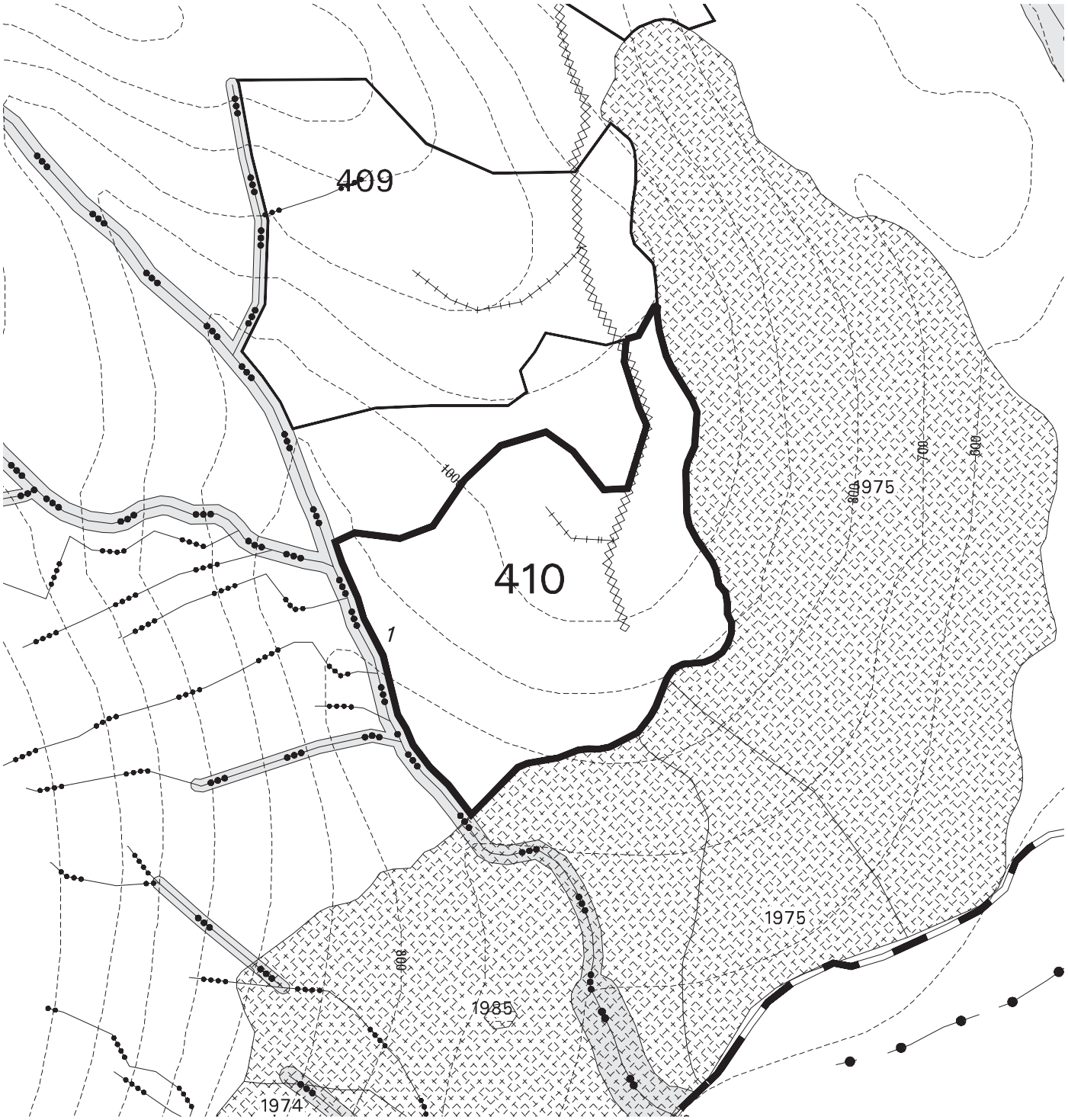
Wildlife/Biological Diversity

Concern: High amount of animal use was reported. Field crews noted red squirrel, black bear, deer, red-breasted sapsucker, and many neo-tropical migrant birds. Large amount of high and medium Volstrata in unit. 2 acres of high value deer habitat (HSI >0.60), 21 acres of medium value deer habitat (HSI 4.0-5.0) along with 29 acres of high value marten habitat (HSI >0.89) occur within the unit.

Response: Clearcut harvest would not isolate habitat or eliminate corridor.

No resource concerns for: Soils, Wetlands, Scenery, Heritage, Vegetation, Karst

Kuiu Record of Decision Unit 410



Existing Managed Stands
Riparian Management Area
Forest Plan Old-Growth Reserve
Extreme Hazard Soils
High Hazard Soils
Unit 410 Boundary
Adjacent Units
Stream Class I
Stream Class II
Stream Class III
Stream Class IV

Open NFS Roads
Closed NFS Roads
Decomissioned Roads
Selected NFS Roads
Reconditioned Roads
Selected Temporary Roads
100-ft. Contour Interval

0 660 1320

Scale is 1 inch = 660 feet

Kuiu Timber Sale Selected Alternative Unit Card

Unit Number:	412	**Unit Acres:**	99		
1999 Aerial Photo:	298_132, 133, 134	**Land Use Designation:**	Timber Production	**Net Timber Volume:**	3,048 MBF
TM-Compartment and Stand:	7-123	**Volume Strata Acres:**	High 93 Medium 6 Low 0		

Existing Stand Condition: Old-growth

Silvicultural Prescription: Even-aged management, clearcut

Logging Method/ Transportation: Cable / One temporary road and one new NFS Road (46035)

Resource Concerns & Responses

Fish Habitat/Watershed

Concern: Stream 1 is Class IV, Channel Type HC2.
Stream reach 2 is Class II, Channel Type HC2.
Stream 3 is Rowan Creek, and is Class II, Channel Type MC2.
Stream reach 4 is Class II, Channel Type HC2.
Stream reach 5 is Class IV, Channel Type HC2.
Stream 6 is Class III, Channel Type HC5.
Stream 7 is Class III, Channel Type HC6.

Response: Streams 1 and 5: Split yard away from Class IV streams whenever possible. Buck, limb, and top felled trees clear of streamcourses. Remove any slash deposited in streamcourse as a result of timber harvest activities. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.
Streams 2, 3, and 4: No programmed commercial timber harvest within the RMA, which is defined as within 100 feet of the stream or to the top of the V-notch, whichever is greater. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.
Streams 6 and 7: No programmed commercial timber harvest within the RMA, which is defined as the V-notch. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.

Concern: Temporary road crosses a Class III stream.

Response: Implement BMPs 12.17, 14.17, 14.5, 14.6, 14.8, 14.9, 14.12, 14.14, 14.15

Concern: Location makes this stand susceptible to windthrow.

Response: Streams 2, 3, 4, 6 and 7: The riparian buffer will be protected by feathering the edge for a distance of 50 horizontal feet where trees are less than 16 inches DBH. Trees that cannot be felled away from the buffer will be retained.

Wildlife/Biological Diversity

Concern: Black bear, red squirrel, deer, red-breasted sapsucker use and game trails were reported by field personnel. Brown Creepers were present and vocalizations were heard within the unit. Large amount of high Volstrata in unit. 50 acres of high value deer habitat (HSI >0.60), 26 acres of medium value deer habitat (HSI 4.0-5.0) along with 93 acres of high value marten habitat (HSI >0.89) occur within the unit.

Response: Clearcut harvest would not isolate habitat and area is not an isolated corridor.

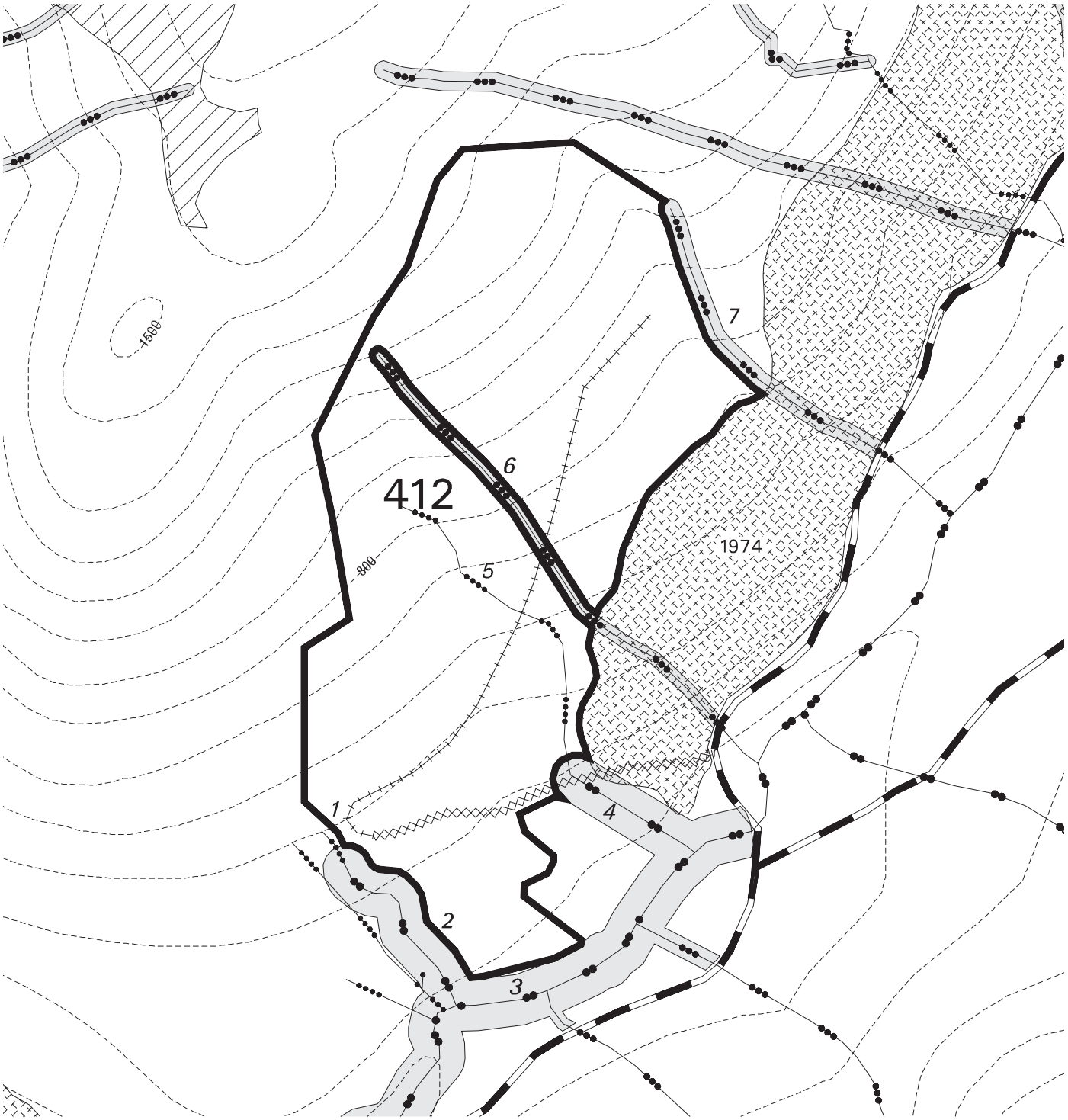
Vegetation/Timber

Concern: Even-aged opening size is close to 100 acres.

Response: If after layout harvest unit exceeds 100 acres, additional analysis will be done following Forest Plan Standards and Guidelines (p 4-72).

No resource concerns for: Soils, Karst, Wetlands, Scenery, Heritage

Kuiu Record of Decision Unit 412



Existing Managed Stands
Riparian Management Area
Forest Plan Old-Growth Reserve
Extreme Hazard Soils
High Hazard Soils
Unit 412 Boundary
Adjacent Units
Stream Class I
Stream Class II
Stream Class III
Stream Class IV

Open NFS Roads
Closed NFS Roads
Decomissioned Roads
Selected NFS Roads
Reconditioned Roads
Selected Temporary Roads
100-ft. Contour Interval

0 660 1320

Scale is 1 inch = 660 feet

Kuiu Timber Sale Selected Alternative Unit Card

Unit Number:	416	**Unit Acres:**	44		
1999 Aerial Photo:	598_95, 598_94	**Land Use Designation:**	Timber Production	**Net Timber Volume:**	1,409 MBF
TM-Compartment and Stand:	6-44	**Volume Strata Acres:**	High 43 Medium 1 Low 0		

Existing Stand Condition: Old-growth

Silvicultural Prescription: Even-aged management, clearcut

Logging Method/ Transportation: Cable / One temporary road and one reconditioned NFS Road (46091)

Resource Concerns & Responses

Fish Habitat/Watershed

Concern: Stream 1 is Class II, Channel Type MC2.
Stream 2 is Class IV, Channel Type HC5.
Stream 3 is Class IV, Channel Type HC5.

Response: Stream 1: No programmed commercial timber harvest within the RMA, which is defined as within 100 feet of the channel, or to the top of the side-slope break, whichever is greater. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.
Streams 2 and 3: Split yard away from Class IV streams whenever possible. Buck, limb, and top felled trees clear of streamcourses. Remove any slash deposited in streamcourse resulting from timber harvest activities. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.

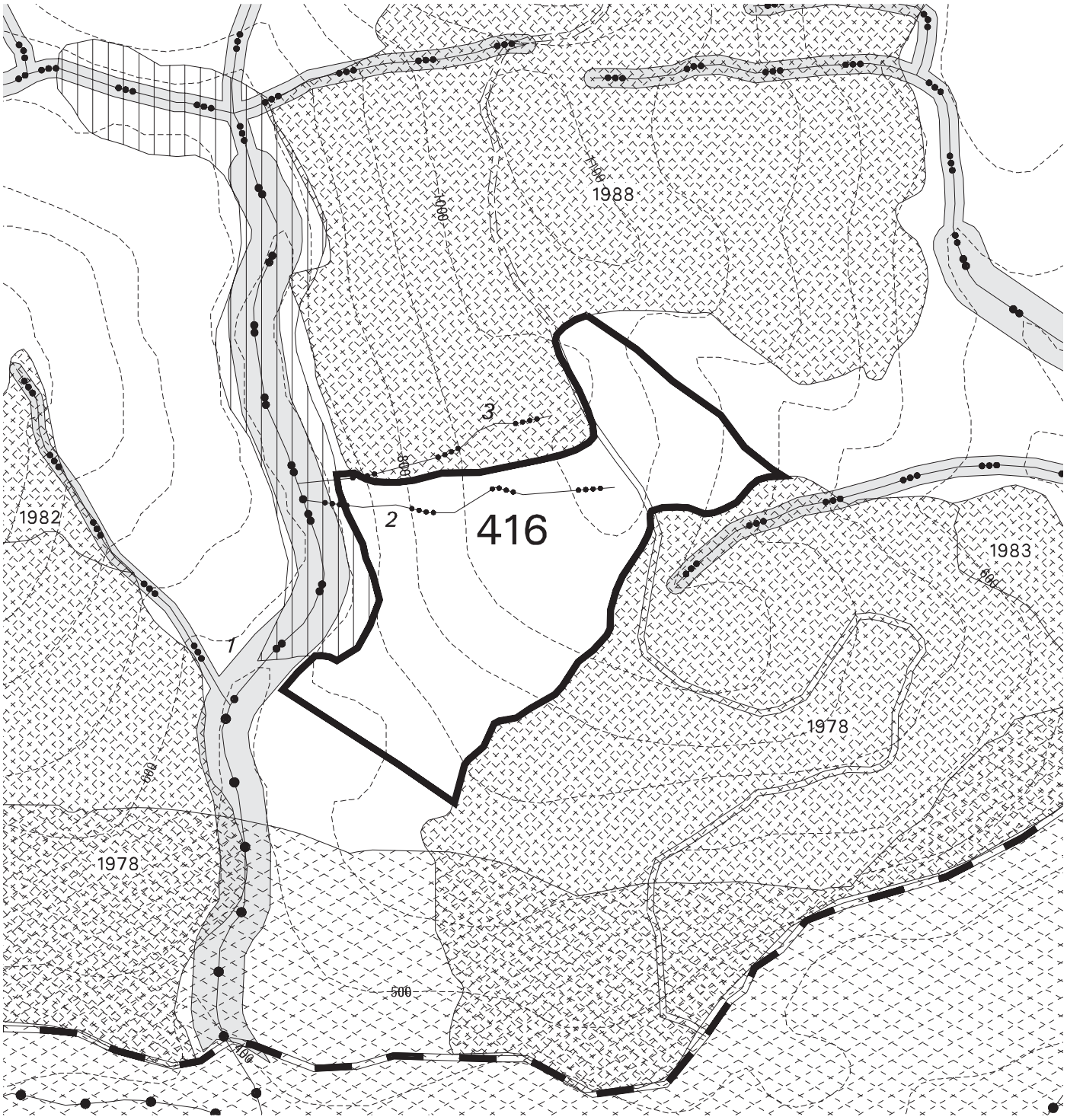
Wildlife/Biological Diversity

Concern: Unit has high Volstrata. 13 acres of high value deer habitat (HSI >0.60), 23 acres of medium value deer habitat (HSI 4.0 to 5.0), and 25 acres of high value marten habitat (HSI >0.89) occur within the unit.

Response: Clearcut harvest will not isolate habitat. Area is not an isolated corridor.

No resource concerns for: Soils, Scenery, Heritage, Vegetation, Karst, Wetlands

Kuiu Record of Decision Unit 416



- Existing Managed Stands
- Riparian Management Area
- Forest Plan Old-Growth Reserve
- Extreme Hazard Soils
- High Hazard Soils
- Unit 416 Boundary
- Adjacent Units
- Stream Class I
- Stream Class II
- Stream Class III
- Stream Class IV
- Open NFS Roads
- Closed NFS Roads
- Decomissioned Roads
- Selected NFS Roads
- Reconditioned Roads
- Selected Temporary Roads
- 100-ft. Contour Interval

0 660 1320

Scale is 1 inch = 660 feet

Kuiu Timber Sale Selected Alternative Unit Card

Unit Number:	417	**Unit Acres:**	24		
1999 Aerial Photo:	198_70, 198_71	**Land Use Designation:**	Timber Production	**Net Timber Volume:**	774 MBF
TM-Compartment and Stand:	7-124	**Volume Strata Acres:**	High 24 Medium 0 Low 0		

Existing Stand Condition: Old-growth

Silvicultural Prescription: Even-aged management, clearcut

Logging Method/ Transportation: Cable / One reconditioned NFS Road (46094)

Resource Concerns & Responses

Fish Habitat/Watershed

Concern: Stream 1 is Class III, Channel Type HC3
Streams 2, 3, and 4 are Class IV, Channel Type HC5.

Response: Stream 1: No programmed commercial timber harvest within the RMA, which is defined as the V-notch. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.
Streams 2, 3, and 4: Split yard away from Class IV streams whenever possible. Buck, limb, and top felled trees clear of streamcourses. Remove any slash deposited in streamcourse as a result of timber harvest activities. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.

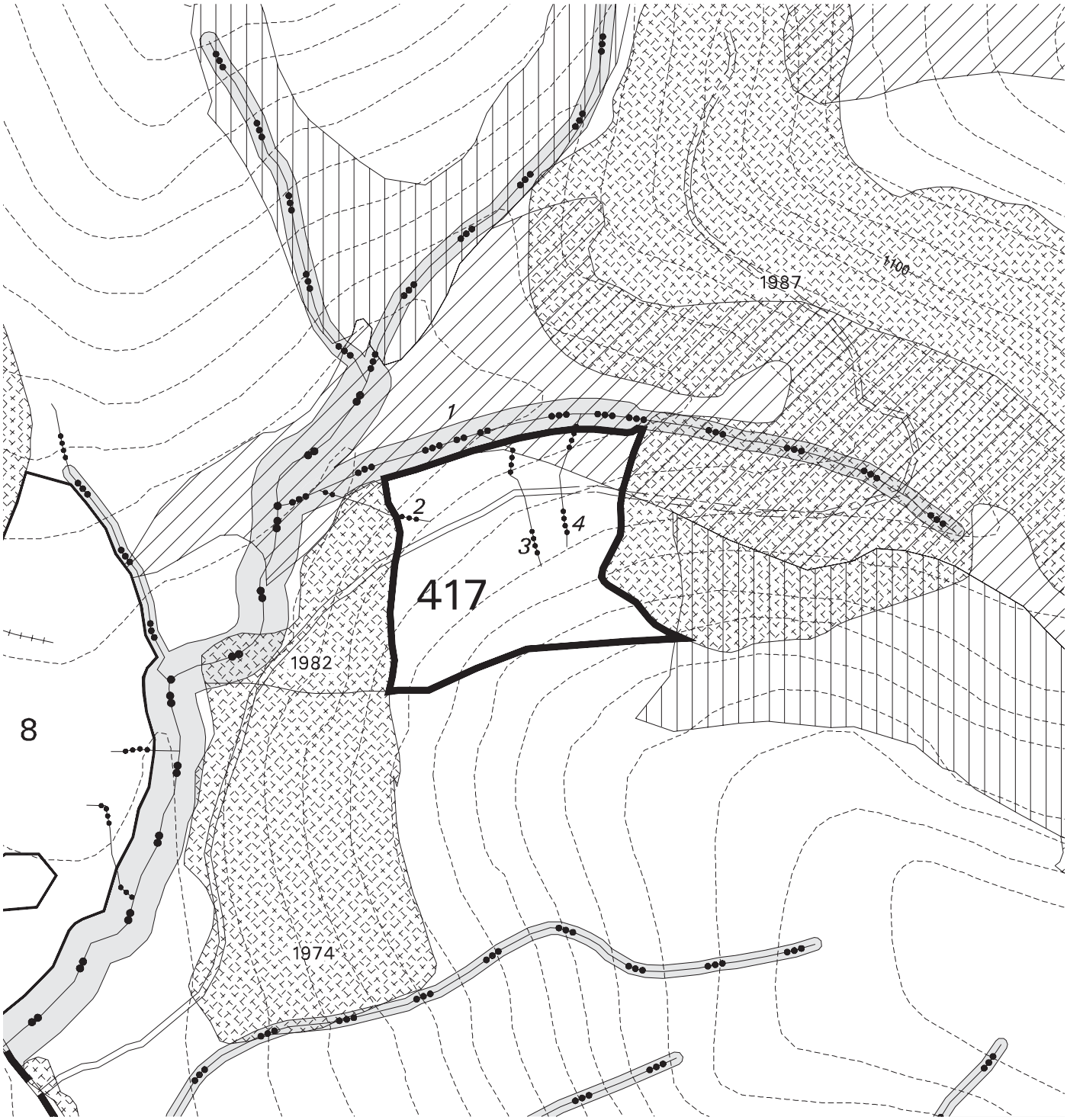
Wildlife/Biological Diversity

Concern: High amount of animal use was reported. High Volstrata exists within the unit. Area is wildlife travel corridor between high and low elevations. 3 acres of high value deer habitat (HSI >0.60), 15 acres of medium value deer habitat (HSI 4.0 to 5.0) along with 24 acres of high value marten habitat (HSI >0.89) occur within the unit.

Response: Selected Alternative will remove the travel corridor.

No resource concerns for: Soils, Wetlands, Karst, Scenery, Heritage, Vegetation

Kuiu Record of Decision Unit 417



- Existing Managed Stands
- Riparian Management Area
- Forest Plan Old-Growth Reserve
- Extreme Hazard Soils
- High Hazard Soils
- Unit 417 Boundary
- Adjacent Units
- Stream Class I
- Stream Class II
- Stream Class III
- Stream Class IV
- Open NFS Roads
- Closed NFS Roads
- Decomissioned Roads
- Selected NFS Roads
- Reconditioned Roads
- Selected Temporary Roads
- 100-ft. Contour Interval

0 660 1320

Scale is 1 inch = 660 feet

Kuiu Timber Sale Selected Alternative Unit Card

Unit Number:	418	**Unit Acres:**	45		
1999 Aerial Photo:	198_70, 198_71	**Land Use Designation:**	Timber Production	**Net Timber Volume:**	687 MBF
TM-Compartment and Stand:	7-125	**Volume Strata Acres:**	High 17 Medium 14 Low 14		

Existing Stand Condition: Old-growth

Silvicultural Prescription: Even-aged management, clearcut

Logging Method/ Transportation: Shovel / One temporary road and one existing NFS Road (6402)

Resource Concerns & Responses

Fish Habitat/Watershed

Concern: Stream 1 is Class II, Channel Type MC2.
Stream 2 is Class IV, Channel Type HC5.
Stream 3 is Class IV, Channel Type HC5.
Stream 4 is Class III, Channel Type HC5.

Response: Stream 1: No programmed commercial timber harvest within the RMA, which is defined as within 100 feet of the channel, or to the top of the side-slope break, whichever is greater. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.
Streams 2 and 3: Split yard away from Class IV streams whenever possible. Buck, limb, and top felled trees clear of streamcourses. Remove any slash deposited in streamcourse as a result of timber harvest activities. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.
Stream 4: No programmed commercial timber harvest within the RMA, which is

Concern: defined as the V-notch. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.

Response: Location makes this stand susceptible to windthrow.
Streams 1 and 4: The riparian buffer will be protected by feathering the edge for a distance of 50 horizontal feet where trees are less than 16 inches DBH. Trees that cannot be felled away from the buffer will be retained.

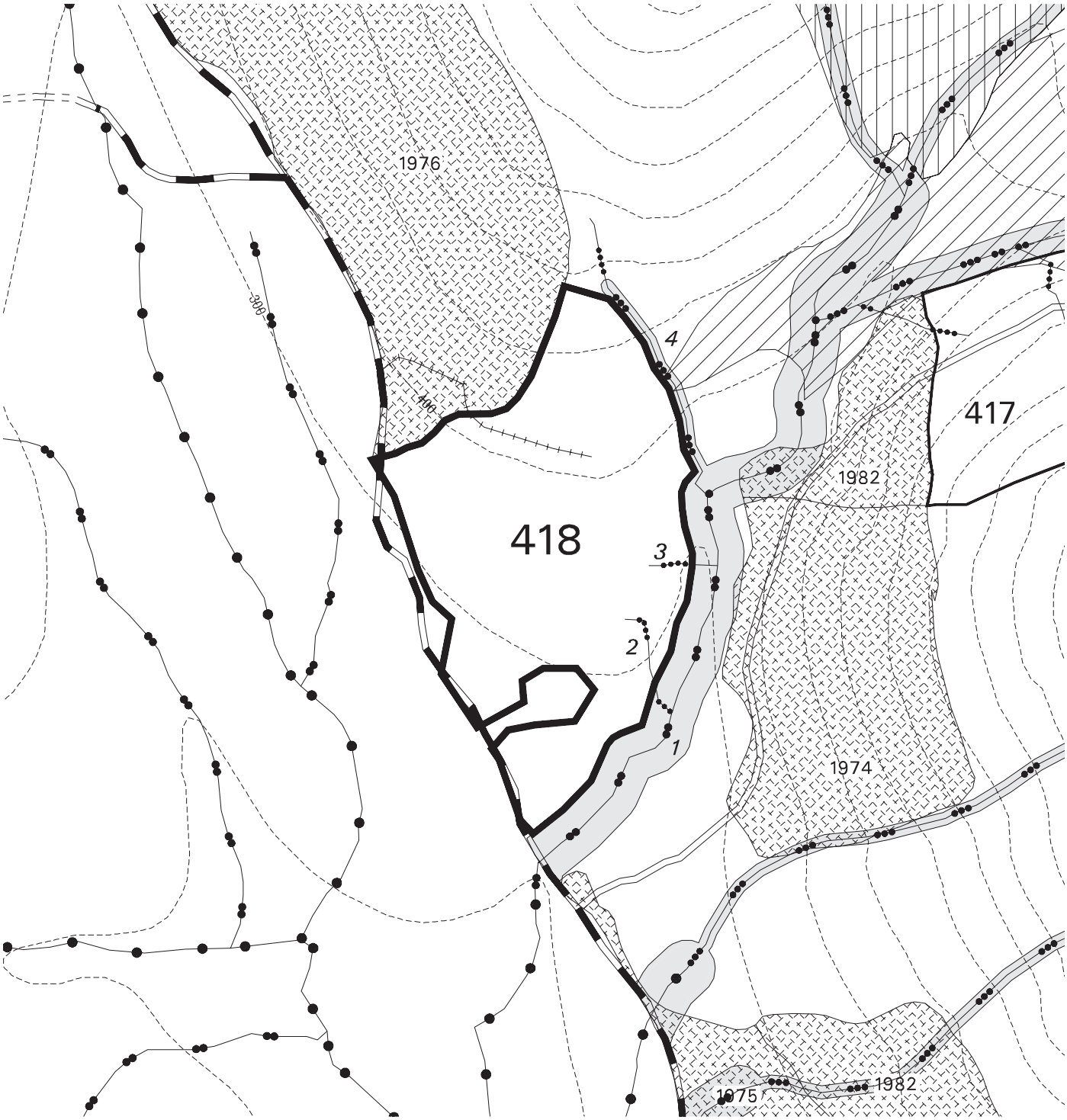
Wildlife/Biological Diversity

Concern: High amount of animal use was reported. High, medium and low Volstrata exists within the unit. Wildlife corridor exists between high and low elevations. 17 acres of high value deer habitat (HSI >0.60), 11 acres of medium value deer habitat (HSI 4.0 to 5.0), and 17 acres of high value marten habitat (HSI >0.89) occur within the unit.

Response: The selected alternative will remove the travel corridor.

No resource concerns for: Scenery, Heritage, Soils, Vegetation, Karst, Wetlands

Kuiu Record of Decision Unit 418



Existing Managed Stands
Riparian Management Area
Forest Plan Old-Growth Reserve
Extreme Hazard Soils
High Hazard Soils
Unit 418 Boundary
Adjacent Units
Stream Class I
Stream Class II
Stream Class III
Stream Class IV

Open NFS Roads
Closed NFS Roads
Decomissioned Roads
Selected NFS Roads
Reconditioned Roads
Selected Temporary Roads
100-ft. Contour Interval

0 660 1320

Scale is 1 inch = 660 feet

Kuiu Timber Sale Selected Alternative Unit Card

Unit Number:	503	**Unit Acres:**	95		
1999 Aerial Photo:	198_102, 103, 104	**Land Use Designation:**	Timber Production	**Net Timber Volume:**	2,637 MBF
TM-Compartment and Stand:	2-128	**Volume Strata Acres:**	High 65 Medium 30 Low 0		

Existing Stand Condition: Old-growth

Silvicultural Prescription: Even-aged management, clearcut

Logging Method/ Transportation: Cable / One temporary road, recondition and extend NFS Road (6427)

Resource Concerns & Responses

Fish Habitat/Watershed

Concern: Stream reach 1 is Class III, Channel Type HC6.
Stream reach 2 is Class II, Channel Type HC6.
Stream 3 is Dean Creek and is Class II, Channel Type HC3.
Stream 4 is Dean Creek and is Class III, Channel Type HC3.
Stream 5 is Class III, Channel Type HC5.

Response: Streams 1, 4, and 5: No programmed commercial timber harvest within the RMA, which is defined as the top of the V-notch. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.
Streams 2 and 3: No timber harvest within 100 feet of stream, or within the v-notch (side slope breaks). Implement BMPs 12.6, 12.6a, 13.9, and 13.16.

Concern: Temporary road crosses a Class III stream.

Response: Implement BMPs 12.17, 14.17, 14.5, 14.6, 14.8, 14.9, 14.12, 14.14, 14.15

Concern: Location makes this stand susceptible to windthrow.
Streams 1, 2, 3, 4 and 5 The riparian buffer will be protected by feathering the edge for a distance of 50 horizontal feet where trees are less than 16 inches DBH. Trees that cannot be felled away from the buffer will be retained.

Wildlife/Biological Diversity

Concern: High animal use. High use of the game trails as a wildlife travel corridor exists between high and low elevations. Large amount of high and medium Volstrata would be harvested in this unit. 5 acres of high value deer habitat (HSI >0.60), 67 acres of medium value deer habitat (HSI 4.0 to 5.0) along with 63 acres of high value marten habitat (HSI >0.89) within unit.

Response: Concerns not addressed. Harvest will eliminate travel corridors between low and high elevations in this unit.

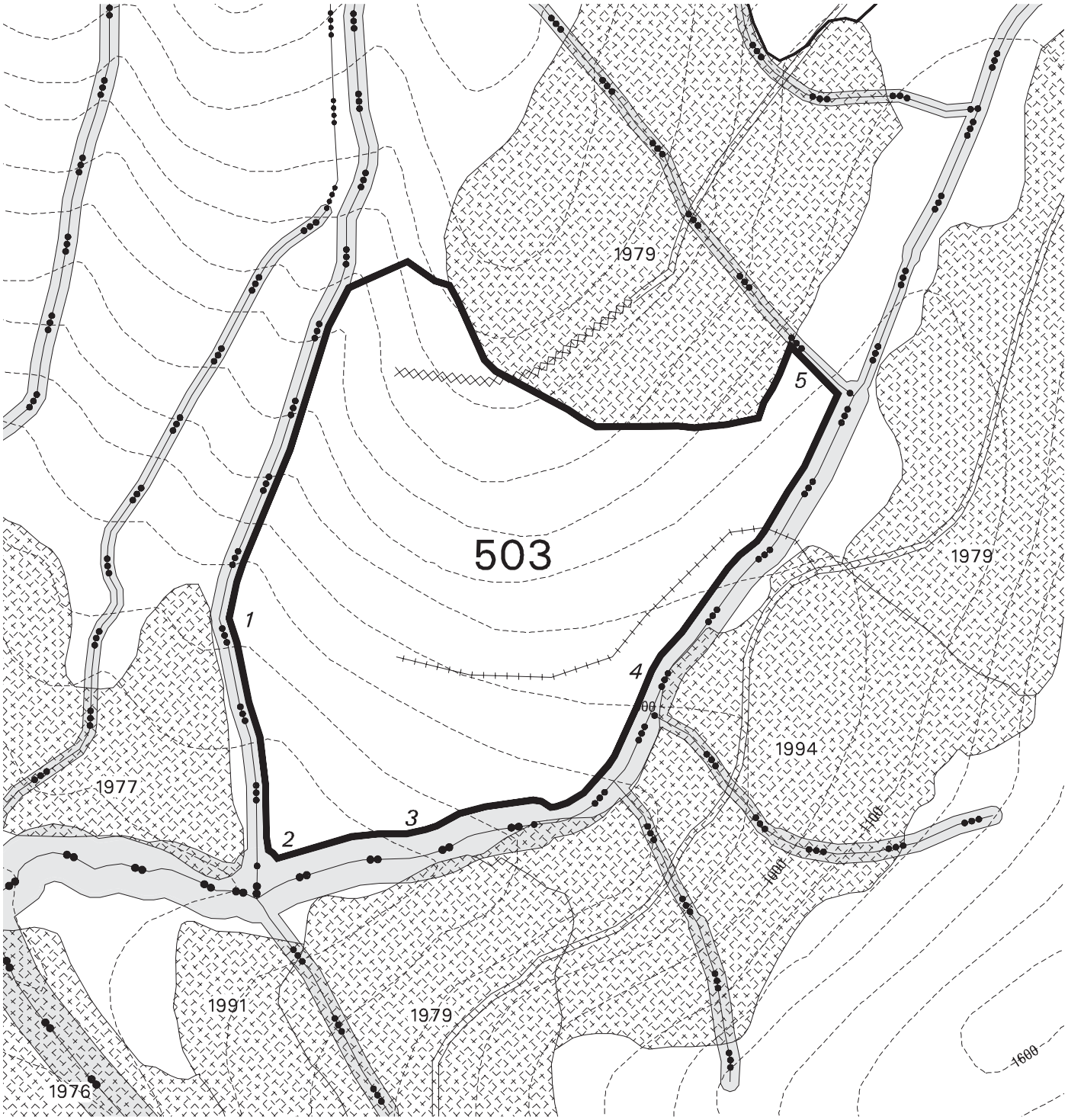
Vegetation/Timber

Concern: Even-aged opening size is close to 100 acres.

Response: If after layout harvest unit exceeds 100 acres, additional analysis will be done following Forest Plan Standards and Guidelines (p 4-72).

No resource concerns for: Soils, Wetlands, Karst, Scenery, Heritage

Kuiu Record of Decision Unit 503



- Existing Managed Stands
- Riparian Management Area
- Forest Plan Old-Growth Reserve
- Extreme Hazard Soils
- High Hazard Soils
- Unit 503 Boundary
- Adjacent Units
- Stream Class I
- Stream Class II
- Stream Class III
- Stream Class IV
- Open NFS Roads
- Closed NFS Roads
- Decomissioned Roads
- Selected NFS Roads
- Reconditioned Roads
- Selected Temporary Roads
- 100-ft. Contour Interval

0 660 1320

Scale is 1 inch = 660 feet

Kuiu Timber Sale Selected Alternative Unit Card

Unit Number:	504	**Unit Acres:**	25		
1999 Aerial Photo:	198_102, 198_103	**Land Use Designation:**	Timber Production	**Net Timber Volume:**	483 MBF
TM-Compartment and Stand:	2-129	**Volume Strata Acres:**	High 14 Medium 11 Low 0		

Existing Stand Condition: Old-growth

Silvicultural Prescription: Even-aged management, clearcut

Logging Method/ Transportation: Cable / Recondition one NFS Road (6427)

Resource Concerns & Responses

Fish Habitat/Watershed

Concern: Stream 1 is Class III, Channel Type HC6.
Stream 2 is Class III, Channel Type HC5.
Stream 3 is Class III, Channel Type HC2.

Response: All Streams: No programmed commercial timber harvest within the RMA, which is defined as the V-notch. Implement BMPs 12.6, 12.6a, 13.9, and 13.16.

Concern: Location makes this stand susceptible to windthrow.

Response: Streams 1 and 2: The riparian buffer will be protected by feathering the edge for a distance of 50 horizontal feet where trees are less than 16 inches DBH. Trees that cannot be felled away from the buffer will be retained.

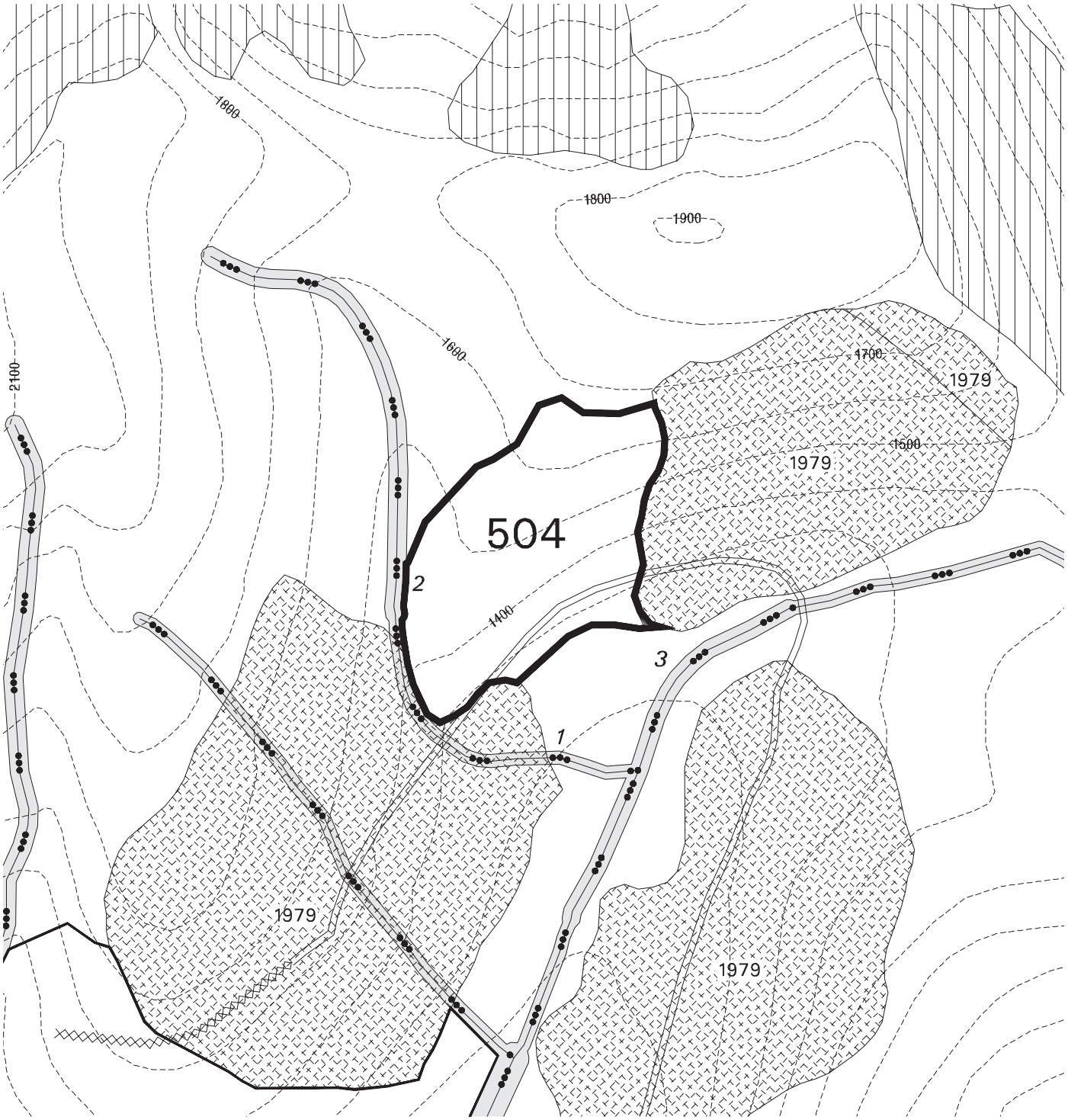
Wildlife/Biological Diversity

Concern: High animal use. High use of the game trails as a wildlife travel corridor between high and low elevation exists within this unit. Large amount of high and medium Volstrata would be harvested in this unit. 11 acres of medium value deer habitat (HSI 4.0 to 5.0) and 13 acres of high value marten habitat (HSI >0.89) occur within the unit.

Response: Concerns not addressed. Clearcut harvest will remove travel corridors between low and high elevations with the harvest of this unit.

No resource concerns for: Soils, Wetlands, Karst, Scenery, Heritage, Vegetation

Kuiu Record of Decision Unit 504



Existing Managed Stands
Riparian Management Area
Forest Plan Old-Growth Reserve
Extreme Hazard Soils
High Hazard Soils
Unit 504 Boundary
Adjacent Units
Stream Class I
Stream Class II
Stream Class III
Stream Class IV

Open NFS Roads
Closed NFS Roads
Decomissioned Roads
Selected NFS Roads
Reconditioned Roads
Selected Temporary Roads
100-ft. Contour Interval

0 660 1320

Scale is 1 inch = 660 feet

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Road Cards

Road Management Objectives

Intended Purpose /Future Use

The road management objectives (RMOs) presented in this appendix establishes the intended purpose and display design maintenance and operation criteria (as per FSH 7709.55) for each National Forest System road associated with timber harvest activities for this project. The information on the RMO form is part of a permanent database that can be updated periodically as access needs, issues, and budgets change. Proposed new roads and existing roads with planned reconstruction or maintenance have a second section with site specific design criteria that will be used during design, construction, and initial monitoring of any road work proposed in this document. See Figure ROD-2 for a map of the Kuiu Timber Sale Area showing Objective Road Maintenance Levels.

General Design Criteria and Elements

The general design criteria provide various descriptions of the type of road and the intended purpose and future use of the road. From this information, the maintenance and operation criteria can be developed. This information is critical for determining whether a Corps of Engineer's permit will be required for segments of road crossing wetlands. Roads built solely for silvicultural purposes do not require these permits.

Maintenance Levels

Maintenance Levels (MLs) within the project area include Maintenance Level 1, 2 and 3. The definitions for maintenance levels originate from the Forest Service Handbook 7709.58. The purpose of the MLs is to define the level of service provided by, and maintenance required for, a specific road or segment.

Level 1. Assigned to intermittent service roads during the time they are closed to vehicular traffic. Emphasis is normally given to maintaining drainage facilities and runoff patterns.

Level 2. Assigned to roads open for use by high clearance vehicles. Passenger car traffic is not a consideration. Log haul may occur at this level.

Level 3. Assigned to roads open and maintained for travel by a prudent driver in a standard passenger car. User comfort and convenience are not considered priorities. There are two ML 3 roads in the project area.

Levels 4 and 5 are maintained to higher levels of comfort for driver in a standard passenger car. There is no ML 4 or 5 roads in the project area.

Operation Criteria

The operation criteria includes a presentation of the five traffic management strategies identified in FSM 7731 (encourage, accept, discourage, prohibit, and eliminate) for application to different traffic classes on each road. The traffic management narrative describes what actions will be taken in order to apply each strategy. For example, if the strategy "eliminate" is prescribed for standard passenger and high clearance vehicles, the narrative describes the method to accomplish this, such as removal of stream crossing structures, gating, etc.

Site-specific Design Criteria

The site-specific design criteria include road location objectives, wetland information, erosion control, proposed rock borrow sources, and all streams within the project area with proposed construction or rehabilitation of stream crossing structures. Site-specific design criteria for the proposed reconstruction of designated roads for this project include timing restrictions for construction activities (Table AI-3).

Table AI-3. Stream classes, species of concern, and construction timing windows for fish stream crossings on designated roads proposed for reconstruction[1]

ROAD #	MILE POST	STREAM CLASS	SPECIES OF CONCERN	CONSTRUCTION TIMING WINDOW[2]
6417	0.119	II	CT	July 18 -- Aug 15
6417	0.789	II	DV	No restriction
6417	0.793	II	DV	No restriction
6417	0.925	I	SS, DV	June 1 -- Sept 1
6417	1.209	I	SS, CT, DV	July 18 -- Aug 15
6417	1.456	I	SH, PS, DV	July 18 -- Aug 1
6427	NONE	NONE	NONE	No restriction
46091	NONE	NONE	NONE	No restriction
46094	NONE	NONE	NONE	No restriction
6422	NONE	NONE	NONE	No restriction

CT = cutthroat, DV = Dolly Varden, SS = silver salmon, SH = steelhead, PS = pink salmon

[1] The following BMPs will be implemented for all reconstructed and temporary roads: 12.17, 14.5, 14.6, 14.8, 14.9, 14.12, 14.14, 14.15, 14.17. See road cards 46030 & 46035 for stream crossing BMPs on newly constructed roads.

[2] In accordance with the MOU between the Forest Service and the State of Alaska, Department of Natural Resources, Title 41 consultation will be completed before any in-stream work begins.

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Kuiu Timber Sale

ROD- 2

Objective Road Maintenance Levels

Legend

- Productive Old-Growth
- Managed Stands
- Non-National Forest
- Lakes/Saltwater
- Road Suitable for Passenger Vehicles
- High Clearence Vehicle Road
- Basic Custodial Care (Closed Road)
- Project Area Boundary
- Stream Class I & II
- 500ft Contour Interval

0 0.5 1 2 3 4 Miles

Backside of map.

Road Management Objective

Project	System	Land Use Designation
Kuiu	Kuiu	ML OG RM SM TM

Route No	Route Name	Begin Terminus	End Terminus
6402	Kuiu Mainline	Saginaw Bay LTF	3 Mile Arm

Begin MP	Length	Status	Map Quarter Quad	Photo year, roll, photos
0.00	31.92	Existing	PA D1,C1, PB C6	'98 598-127-128, 298-123, 198-78, 105 to 112, 198-64 to 70, 298-138, 598-145 to 147, 83, 698-4, 69,798-196, 133, 13, 498-140, 139, 29, 30

General Design Criteria and Elements

Functional Class	Service Life	Surface	Width	Design Speed	Critical Vehicle	Design Vehicle
Local	LI	Shot rock	16'	30	Lowboy	Lowboy

Intended Purpose/Future Use
Serves as main arterial road from Saginaw Bay to Threemile Arm, will remain open to all traffic to junction with 6434.

Maintenance Criteria

Bmp	Emp	Operational Maintenance Level (Current Condition)	Objective Maintenance Level (Desired Future Condition)	Remarks
0.00	28.75	3	2	Keep mainline road open
28.75	31.92	3	1	Close when funds available

Maintenance Narrative
Road will be maintained to facilitate travel passenger car at 30 mph. All culverts, ditches and drainage structures will be serviced, and road brushed.

Operation Criteria

Highway Safety Act: Yes **Jurisdiction:** National Forest ownership

Traffic Management Strategies	**Encourage:**	Hikers, bicycles
	Accept:	All motorized vehicles on open segment
	Discourage:	N/A
	Prohibit:	Motorized vehicles on closed segment
	Eliminate:	Motorized vehicles on closed segment

Travel Management Narrative
Road will remain open to all traffic except for last 3 miles. Road closure may include any combination of tanktraps at the beginning of the road, pulling some or all drainage structures such as culverts, and/or gating. This road will be further evaluated for the most effective and efficient closure method prior to implementation. Additional stream structures and road cross drain structures may be removed if necessary to address resource concerns.

Approved _____ District Ranger

5/6/08
Date

Road Management Objective

Project			System	Land Use Designation
Kuiu			Kuiu	TM
Route No	**Route Name**		**Begin Terminus**	**End Terminus**
6413	South Fork Saginaw		6402 MP 2	
Begin MP	**Length**	**Status**	**Map Quarter Quad**	**Photo year, roll, photos**
0.00	2.68	Existing	PA D1 SE	'98 598-128 to 132

General Design Criteria and Elements

Functional Class	Service Life	Surface	Width	Design Speed	Critical Vehicle	Design Vehicle
Local	LI	Shot rock	14'	10	Log truck	Log truck

Intended Purpose/Future Use
Access for silvicultural activities.

Maintenance Criteria

Bmp	Emp	Operational Maintenance Level (Current Condition)	Objective Maintenance Level (Desired Future Condition)	Remarks
0.00	2.68	2	1	Close after timber sale

Maintenance Narrative
Road will be maintained to facilitate travel by pickup truck at 10 mph. All culverts, ditches and drainage structures will be serviced, and road brushed.

Operation Criteria

Highway Safety Act: No **Jurisdiction:** National Forest ownership

Traffic Management Strategies	**Encourage:**	Hikers, bicycles
	Accept:	High clearance vehicles when open
	Discourage:	N/A
	Prohibit:	Motorized vehicles on closed section
	Eliminate:	Motorized vehicles on closed section

Travel Management Narrative
Maintain as maintenance level 2 during project activities. Close road after timber harvest (maintenance level 1). Road closure may include any combination of tanktraps at the beginning of the road, pulling some or all drainage structures such as culverts, and/or gating. This road will be further evaluated for the most effective and efficient closure method prior to implementation. Additional stream structures and road cross drain structures may be removed if necessary to address resource concerns.

Approved _____ 5/6/08
District Ranger Date

Road Management Objective

Project	System	Land Use Designation
Kuiu	Kuiu	OG RR TM

Route No	Route Name	Begin Terminus	End Terminus
6415	Kuiu Connection	6402 MP 13	6402 MP 2

Begin MP	Length	Status	Map Quarter Quad	Photo year, roll, photos
0.00	18.51	Existing	PA C1 NW, PA D1 SE, SW	'98 598-128, 103, 698-24, 50, 798-178 to 183, 698-57,16, 598-94, 137, 298-132 to 135

General Design Criteria and Elements

Functional Class	Service Life	Surface	Width	Design Speed	Critical Vehicle	Design Vehicle
Local	LI	Shot rock	16'	30	Lowboy	Lowboy

Intended Purpose/Future Use
Serves as part of loop road on north Kuiu between Rowan and Saginaw Bays.

Maintenance Criteria

Bmp	Emp	Operational Maintenance Level (Current Condition)	Objective Maintenance Level (Desired Future Condition)	Remarks
0.00	18.51	3	2	Keep mainline road open

Maintenance Narrative
Road will be maintained to facilitate travel passenger car at 30 mph. All culverts, ditches and drainage structures will be serviced, and road brushed.

Operation Criteria

Highway Safety Act: Yes **Jurisdiction:** National Forest ownership

Traffic Management Strategies	**Encourage:**	Hikers, bicycles
	Accept:	All motorized vehicles
	Discourage:	N/A
	Prohibit:	N/A
	Eliminate:	N/A

Travel Management Narrative
Keep road open to all traffic.

Approved _____ 5/6/08
District Ranger Date

Road Management Objective

Project	System	Land Use Designation
Kuiu	Kuiu	TM

Route No	Route Name	Begin Terminus	End Terminus
6417	Security Bay Connection	6402 MP 7	

Begin MP	Length	Status	Map Quarter Quad	Photo year, roll, photos
0.00	3.67	Existing	PA D1 SW	'98 198-107, 108, 74, 298-127 to 129

General Design Criteria and Elements

Functional Class	Service Life	Surface	Width	Design Speed	Critical Vehicle	Design Vehicle
Local	LI	Shot rock	14'	10	Log truck	Log truck

Intended Purpose/Future Use
Access for silvicultural activities. Close road until needed in the future.

Maintenance Criteria

Bmp	Emp	Operational Maintenance Level (Current Condition)	Objective Maintenance Level (Desired Future Condition)	Remarks
0.00	2.50	1	2	Open to MP 2.5 for timber sale
0.00	3.67	2	1	Close after timber sale

Maintenance Narrative
When road is reopened, it will be maintained to facilitate travel by pickup truck at 10 mph. All culverts, ditches and drainage structures will be serviced, and road brushed.

Operation Criteria

Highway Safety Act: No **Jurisdiction:** National Forest ownership

Traffic Management Strategies	**Encourage:**	Hikers, bicycles
	Accept:	High clearance vehicles when open
	Discourage:	N/A
	Prohibit:	Motorized vehicles on closed section
	Eliminate:	Motorized vehicles on closed section

Travel Management Narrative
Maintain as maintenance level 2 during project activities. Close road after timber harvest (maintenance level 1). Road closure may include any combination of tanktraps at the beginning of the road, pulling some or all drainage structures such as culverts, and/or gating. This road will be further evaluated for the most effective and efficient closure method prior to implementation. Additional stream structures and road cross drain structures may be removed if necessary to address resource concerns.

Approved _____ 5/6/08
District Ranger Date

Road Management Objective

Project	System	Land Use Designation
Kuiu	Kuiu	TM

Route No	Route Name	Begin Terminus	End Terminus
6418	Upper Saginaw Bay	6402 MP 3	

Begin MP	Length	Status	Map Quarter Quad	Photo year, roll, photos
0.00	1.70	Existing	PA D1 SW	'98 298-123, 124, 198-77

General Design Criteria and Elements

Functional Class	Service Life	Surface	Width	Design Speed	Critical Vehicle	Design Vehicle
Local	LI	Shot rock	14'	10	Log truck	Log truck

Intended Purpose/Future Use
Access for silvicultural activities. Close road until needed in the future.

Maintenance Criteria

Bmp	Emp	Operational Maintenance Level (Current Condition)	Objective Maintenance Level (Desired Future Condition)	Remarks
0.00	1.70	2	2	Maintain for timber harvest
0.00	1.70	2	1	Close after timber harvest

Maintenance Narrative
Road will be maintained to facilitate travel by pickup truck at 10 mph. All culverts, ditches and drainage structures will be serviced, and road brushed.

Operation Criteria

Highway Safety Act: No **Jurisdiction:** National Forest ownership

Traffic Management Strategies		
	Encourage:	Hikers, bicycles
	Accept:	High clearance vehicles when open
	Discourage:	N/A
	Prohibit:	Motorized vehicles on closed section
	Eliminate:	Motorized vehicles on closed section

Travel Management Narrative
Maintain as maintenance level 2 during project activities. Close road after timber harvest (maintenance level 1). Road closure may include any combination of tanktraps at the beginning of the road, pulling some or all drainage structures such as culverts, and/or gating. This road will be further evaluated for the most effective and efficient closure method prior to implementation. Additional stream structures and road cross drain structures may be removed if necessary to address resource concerns.

Approved _____ District Ranger

5/6/08
Date

Road Management Objective

Project			System	Land Use Designation
Kuiu			Kuiu	TM
Route No	**Route Name**		**Begin Terminus**	**End Terminus**
6422	Saginaw Bay		6417 MP 2	
Begin MP	**Length**	**Status**	**Map Quarter Quad**	**Photo year, roll, photos**
0.00	0.24	Existing	PA D1 SW	'98 198-73

General Design Criteria and Elements

Functional Class	Service Life	Surface	Width	Design Speed	Critical Vehicle	Design Vehicle
Local	LI	Shot rock	14'	10	Log truck	Log truck

Intended Purpose/Future Use
Access for silvicultural activities. Close road until needed in the future.

Maintenance Criteria

Bmp	Emp	Operational Maintenance Level (Current Condition)	Objective Maintenance Level (Desired Future Condition)	Remarks
0.00	0.24	1	2	Open for timber sale
0.00	0.24	2	1	Close after timber sale

Maintenance Narrative
When road is reopened, it will be maintained to facilitate travel by pickup truck at 10 mph. All culverts, ditches and drainage structures will be serviced, and road brushed.

Operation Criteria

Highway Safety Act: No **Jurisdiction:** National Forest ownership

Traffic Management Strategies	**Encourage:**	Hikers, bicycles
	Accept:	High clearance vehicles when open
	Discourage:	N/A
	Prohibit:	Motorized vehicles on closed section
	Eliminate:	Motorized vehicles on closed section

Travel Management Narrative
Maintain as maintenance level 2 during project activities. Close road after timber harvest (maintenance level 1). Road closure may include any combination of tanktraps at the beginning of the road, pulling some or all drainage structures such as culverts, and/or gating. This road will be further evaluated for the most effective and efficient closure method prior to implementation. Additional stream structures and road cross drain structures may be removed if necessary to address resource concerns.

Approved _____ 5/6/08
District Ranger Date

Road Management Objective

Project	System	Land Use Designation
Kuiu	Kuiu	RR TM

Route No	Route Name	Begin Terminus	End Terminus
46091	Wilder	6415 MP 5	

Begin MP	Length	Status	Map Quarter Quad	Photo year, roll, photos
0.00	1.58	Existing	PA D1 SE	'98 598-94, 95

General Design Criteria and Elements

Functional Class	Service Life	Surface	Width	Design Speed	Critical Vehicle	Design Vehicle
Local	LI	Shot rock	14'	10	Log truck	Log truck

Intended Purpose/Future Use
Local road used for silvicultural activities, will be opened periodically, closed during times of inactivity.

Maintenance Criteria

Bmp	Emp	Operational Maintenance Level (Current Condition)	Objective Maintenance Level (Desired Future Condition)	Remarks
0.00	1.10	1	2	Open to MP 1.1 for timber sale
0.00	1.58	2	1	Close after timber sale

Maintenance Narrative
When road is reopened, it will be maintained to facilitate travel by pickup truck at 10 mph. All culverts, ditches and drainage structures will be serviced, and road brushed.

Operation Criteria

Highway Safety Act: No **Jurisdiction:** National Forest ownership

Traffic Management Strategies

Encourage:	Hikers, bicycles
Accept:	High clearance vehicles when open
Discourage:	N/A
Prohibit:	Motorized vehicles on closed section
Eliminate:	Motorized vehicles on closed section

Travel Management Narrative
Maintain as maintenance level 2 during project activities. Close road after timber harvest (maintenance level 1). Road closure may include any combination of tanktraps at the beginning of the road, pulling some or all drainage structures such as culverts, and/or gating. This road will be further evaluated for the most effective and efficient closure method prior to implementation. Additional stream structures and road cross drain structures may be removed if necessary to address resource concerns.

Approved _____ District Ranger

5/6/08
Date

Road Management Objective

Project	System	Land Use Designation
Kuiu	Kuiu	TM

Route No	Route Name	Begin Terminus	End Terminus
46094	Burke Wind	6402 MP 13	

Begin MP	Length	Status	Map Quarter Quad	Photo year, roll, photos
0.00	1.58	Existing	PA C1 NW, PA D1 SW	'98 198-69, 70, 71

General Design Criteria and Elements

Functional Class	Service Life	Surface	Width	Design Speed	Critical Vehicle	Design Vehicle
Local	LI	Shot rock	14'	10	Log truck	Log truck

Intended Purpose/Future Use
Local road used for silvicultural activities, will be opened periodically, closed during times of inactivity.

Maintenance Criteria

Bmp	Emp	Operational Maintenance Level (Current Condition)	Objective Maintenance Level (Desired Future Condition)	Remarks
0.00	0.80	1	2	Open to MP 0.8 for timber sale
0.00	1.58	2	1	Close after timber sale

Maintenance Narrative
When road is reopened, it will be maintained to facilitate travel by pickup truck at 10 mph. All culverts, ditches and drainage structures will be serviced, and road brushed.

Operation Criteria

Highway Safety Act: No **Jurisdiction:** National Forest ownership

Traffic Management Strategies	**Encourage:**	Hikers, bicycles
	Accept:	High clearance vehicles when open
	Discourage:	N/A
	Prohibit:	Motorized vehicles on closed section
	Eliminate:	Motorized vehicles on closed section

Travel Management Narrative
Maintain first 0.80 miles as maintenance level 2 during project activities. Close road after timber harvest (maintenance level 1). Road closure may include any combination of tanktraps at the beginning of the road, pulling some or all drainage structures such as culverts, and/or gating. This road will be further evaluated for the most effective and efficient closure method prior to implementation. Additional stream structures and road cross drain structures may be removed if necessary to address resource concerns.

Approved _____ District Ranger

5/6/08
Date

Road Management Objective

Project	System	Land Use Designation
Kuiu	Kuiu	TM

Route No	Route Name	Begin Terminus	End Terminus
46096	Shorty	6413 MP 2	

Begin MP	Length	Status	Map Quarter Quad	Photo year, roll, photos
0.00	3.80	Existing	PA D1 SW, SE	'98 598-132, 198 to 102

General Design Criteria and Elements

Functional Class	Service Life	Surface	Width	Design Speed	Critical Vehicle	Design Vehicle
Local	LI	Shot rock	14'	10	Log truck	Log truck

Intended Purpose/Future Use
Local road used for silvicultural activities, will be opened periodically, closed during times of inactivity.

Maintenance Criteria

Bmp	Emp	Operational Maintenance Level (Current Condition)	Objective Maintenance Level (Desired Future Condition)	Remarks
0.00	3.80	2	1	Close after timber sale

Maintenance Narrative
Road will be maintained to facilitate travel by pickup truck at 10 mph. All culverts, ditches and drainage structures will be serviced, and road brushed.

Operation Criteria

Highway Safety Act: No **Jurisdiction:** National Forest ownership

Traffic Management Strategies	**Encourage:**	Hikers, bicycles
	Accept:	High clearance vehicles when open
	Discourage:	N/A
	Prohibit:	Motorized vehicles on closed section
	Eliminate:	Motorized vehicles on closed section

Travel Management Narrative
Maintain as maintenance level 2 during project activities. Close road after timber harvest (maintenance level 1). Road closure may include any combination of tanktraps at the beginning of the road, pulling some or all drainage structures such as culverts, and/or gating. This road will be further evaluated for the most effective and efficient closure method prior to implementation. Additional stream structures and road cross drain structures may be removed if necessary to address resource concerns.

Approved _____ 5/6/08
District Ranger Date

Road Management Objective

Project		System	Land Use Designation
Kuiu		Kuiu	OG TM
Route No	**Route Name**	**Begin Terminus**	**End Terminus**
46030		6415 MP 3.50	
Begin MP	**Length** / **Status**	**Map Quarter Quad**	**Photo year, roll, photos**
0.00	2.56 / Planned		

General Design Criteria and Elements

Functional Class	Service Life	Surface	Width	Design Speed	Critical Vehicle	Design Vehicle
Local	LI	Shot rock	14'	10	Log truck	Log truck

Intended Purpose/Future Use
Local road used for silvicultural activities, will be opened periodically, closed during times of inactivity.

Maintenance Criteria

Bmp	Emp	Operational Maintenance Level (Current Condition)	Objective Maintenance Level (Desired Future Condition)	Remarks
0.00	2.56	2	1	Close after timber sale

Maintenance Narrative
Road will be maintained to facilitate travel by pickup truck at 10 mph. All culverts, ditches and drainage structures will be serviced, and road brushed.

Operation Criteria

Highway Safety Act: No **Jurisdiction:** National Forest ownership

Traffic Management Strategies

Encourage:	Hikers, bicycles
Accept:	High clearance vehicles
Discourage:	N/A
Prohibit:	N/A
Eliminate:	Motorized vehicles on closed section

Travel Management Narrative
Maintain as maintenance level 2 during project activities. Close road after timber harvest (maintenance level 1). Road closure may include any combination of tanktraps at the beginning of the road, pulling some or all drainage structures such as culverts, and/or gating. This road will be further evaluated for the most effective and efficient closure method prior to implementation. Additional stream structures and road cross drain structures may be removed if necessary to address resource concerns.

Approved _____ District Ranger 5/6/03 Date

Site Specific Design Criteria

Road 46030

ROAD LOCATION: The road steadily gains elevation between the beginning point at the existing Road 6415. The 6,100 feet follows the existing roadbed of a decommissioned temporary road. At about 6,100 feet the road leaves the existing decommissioned roadbed and heads west across a muskeg forest mix saddle area toward the next hillside that contains the timber units. At about 6,900 feet a stream crossing is needed using a 50 foot log stringer bridge. At about 7,400 feet until the end of the road, the road is slowly gaining elevation on timbered hillsided to access the timber units.

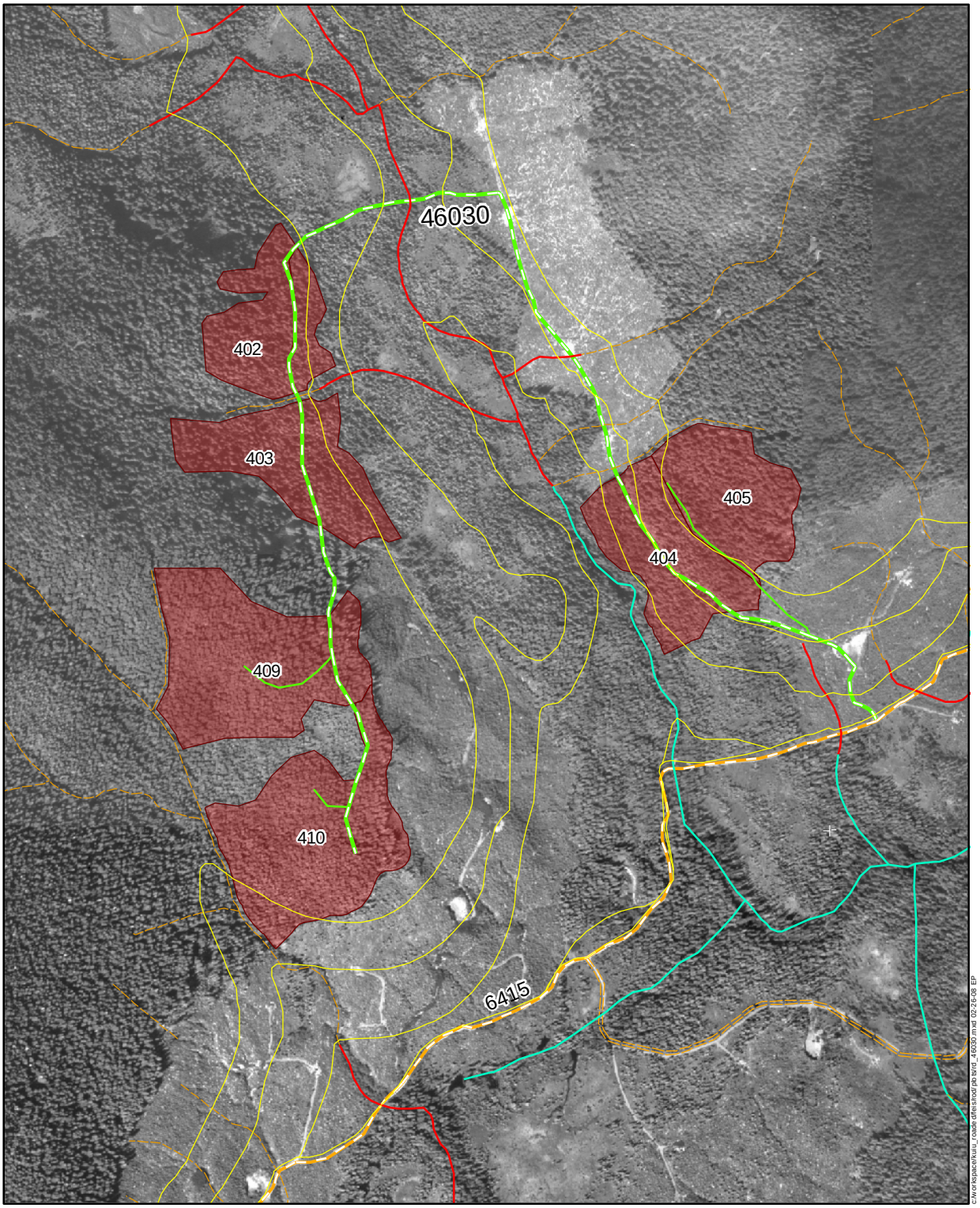
WETLANDS: The road location crosses no mapped wetlands (BMP 12.5). Most of this road segment would be constructed as timber access road.

EROSION CONTROL: An erosion control plan for construction and maintenance will be developed by the contractor and approved by the Contracting Officer (BMP 14.5). All areas of organic or mineral soil exposed during construction shall be grass seeded and fertilized (BMP 12.17, 14.8)

ROCK PITS: During periods of high rainfall (as defined in current Regional specifications), blasting operations will be suspended at quarries near potentially unstable sites where ground vibration may induce mass movement (BMP 14.6).

FISH STREAM CROSSINGS: The road crosses one Class II stream as described below. Implement BMPs 14.14 and 14.17 to minimize stream channel disturbances, related sediment production, adverse impacts on water quality, stream courses, and fisheries resources from the installation of this bridge.

MP 1.35 AHMU II Channel Type MM1 BF Width 17 ft Incision 13 ft Substrate bedrock, cobble Gradient 3% Structure 50' Log Stringer Bridge Narrative: Mostly bedrock. No timing required.



Legend

- Units
- Contours 100 ft.
- Stream Class I
- Stream Class II
- Stream Class III
- Suitable for Passenger Vehicle Road (ML3)
- High Clearance Vehicle Road (ML2)
- Basic Custodial Care (Closed Road) (ML1)
- New NFS Designated Road Construction (ML2)
- Reconditioned Road
- New Temporary Road Construction

Road 46030

0 660 1,320 2,640 Feet

1 inch equals 1,320 feet

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Road Management Objective

Project			System	Land Use Designation
Kuiu			Kuiu	OG TM
Route No	**Route Name**		**Begin Terminus**	**End Terminus**
46032			46096 MP 1.10	
Begin MP	**Length**	**Status**	**Map Quarter Quad**	**Photo year, roll, photos**
0.00	1.39	Planned		

General Design Criteria and Elements

Functional Class	Service Life	Surface	Width	Design Speed	Critical Vehicle	Design Vehicle
Local	LI	Shot rock	14'	10	Log truck	Log truck

Intended Purpose/Future Use
Local road used for silvicultural activities, will be opened periodically, closed during times of inactivity.

Maintenance Criteria

Bmp	Emp	Operational Maintenance Level (Current Condition)	Objective Maintenance Level (Desired Future Condition)	Remarks
0.00	1.39	2	1	Close after timber sale

Maintenance Narrative
Road will be maintained to facilitate travel by pickup truck at 10 mph. All culverts, ditches and drainage structures will be serviced, and road brushed.

Operation Criteria

Highway Safety Act: No **Jurisdiction:** National Forest ownership

Traffic Management Strategies	**Encourage:**	Hikers, bicycles
	Accept:	High clearance vehicles
	Discourage:	N/A
	Prohibit:	N/A
	Eliminate:	Motorized vehicles on closed section

Travel Management Narrative
Maintain as maintenance level 2 during project activities. Close road after timber harvest (maintenance level 1). Road closure may include any combination of tanktraps at the beginning of the road, pulling some or all drainage structures such as culverts, and/or gating. This road will be further evaluated for the most effective and efficient closure method prior to implementation. Additional stream structures and road cross drain structures may be removed if necessary to address resource concerns.

Approved _____ 5/6/08
District Ranger Date

Site Specific Design Criteria

Road 46032

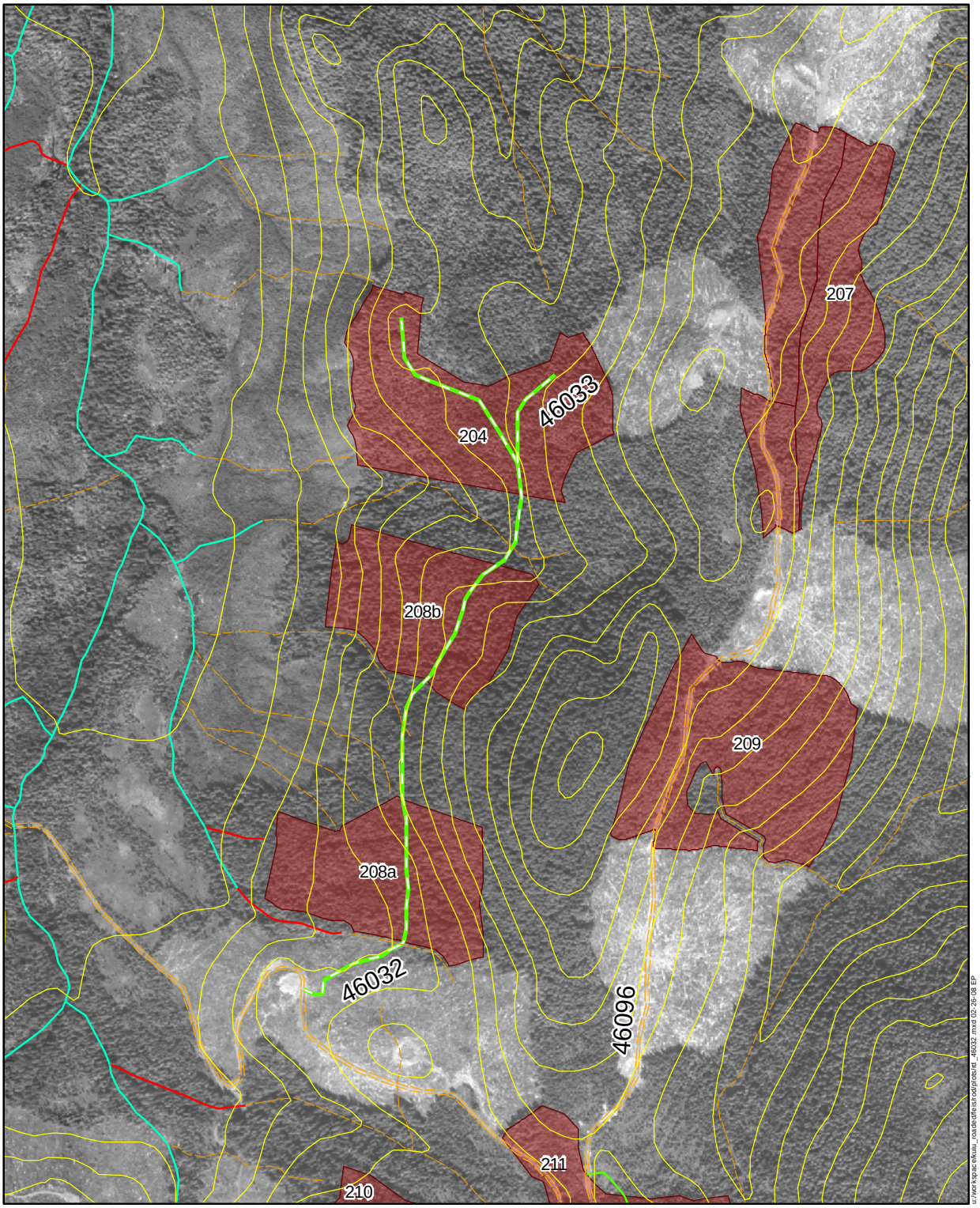
ROAD LOCATION: The road steadily gains elevation between the beginning point at the existing Road 46096. The first 1,500 feet steadly gains elevation through a 15 year old clearcut. The road then enters timber sideslope and continues to gain elevation at an average of 10% to 15%. The majority of the road is located on sideslope averaging about 40 to 50%.

WETLANDS: The road location crosses no mapped wetlands (BMP 12.5). This road segment would be constructed as timber access road.

EROSION CONTROL: An erosion control plan for construction and maintenance will be developed by the contractor and approved by the Contracting Officer (BMP 14.5). All areas of organic or mineral soil exposed during construction shall be grass seeded and fertilized (BMP 12.17, 14.8)

ROCK PITS: During periods of high rainfall (as defined in current Regional specifications), blasting operations will be suspended at quarries near potentially unstable sites where ground vibration may induce mass movement (BMP 14.6).

FISH STREAM CROSSINGS: There are no stream crossings that require site-specific design consideration for volume of flow, fish habitat, or other design complexity.



Legend

- Units
- Contours 100 ft.
- Stream Class I
- Stream Class II
- Stream Class III
- Suitable for Passenger Vehicle Road (ML3)
- High Clearance Vehicle Road (ML2)
- Basic Custodial Care (Closed Road) (ML1)
- New NFS Designated Road Construction (ML2)
- Reconditioned Road
- New Temporary Road Construction

Road 46032

0 660 1,320 2,640 Feet

1 inch equals 1,320 feet

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Road Management Objective

Project		System	Land Use Designation
Kuiu		Kuiu	OG TM
Route No	**Route Name**	**Begin Terminus**	**End Terminus**
46033		46032 MP 1.10	
Begin MP	**Length** / **Status**	**Map Quarter Quad**	**Photo year, roll, photos**
0.00	0.17 / Planned		

General Design Criteria and Elements

Functional Class	Service Life	Surface	Width	Design Speed	Critical Vehicle	Design Vehicle
Local	LI	Shot rock	14'	10	Log truck	Log truck

Intended Purpose/Future Use
Local road used for silvicultural activities, will be opened periodically, closed during times of inactivity.

Maintenance Criteria

Bmp	Emp	Operational Maintenance Level (Current Condition)	Objective Maintenance Level (Desired Future Condition)	Remarks
0.00	0.17	2	1	Close after timber sale

Maintenance Narrative
Road will be maintained to facilitate travel by pickup truck at 10 mph. All culverts, ditches and drainage structures will be serviced, and road brushed.

Operation Criteria

Highway Safety Act: No **Jurisdiction:** National Forest ownership

Traffic Management Strategies	**Encourage:**	Hikers, bicycles
	Accept:	High clearance vehicles
	Discourage:	N/A
	Prohibit:	N/A
	Eliminate:	Motorized vehicles on closed section

Travel Management Narrative
Maintain as maintenance level 2 during project activities. Close road after timber harvest (maintenance level 1). Road closure may include any combination of tanktraps at the beginning of the road, pulling some or all drainage structures such as culverts, and/or gating. This road will be further evaluated for the most effective and efficient closure method prior to implementation. Additional stream structures and road cross drain structures may be removed if necessary to address resource concerns.

Approved _____ District Ranger

5/6/08 Date

Site Specific Design Criteria

Road 46033

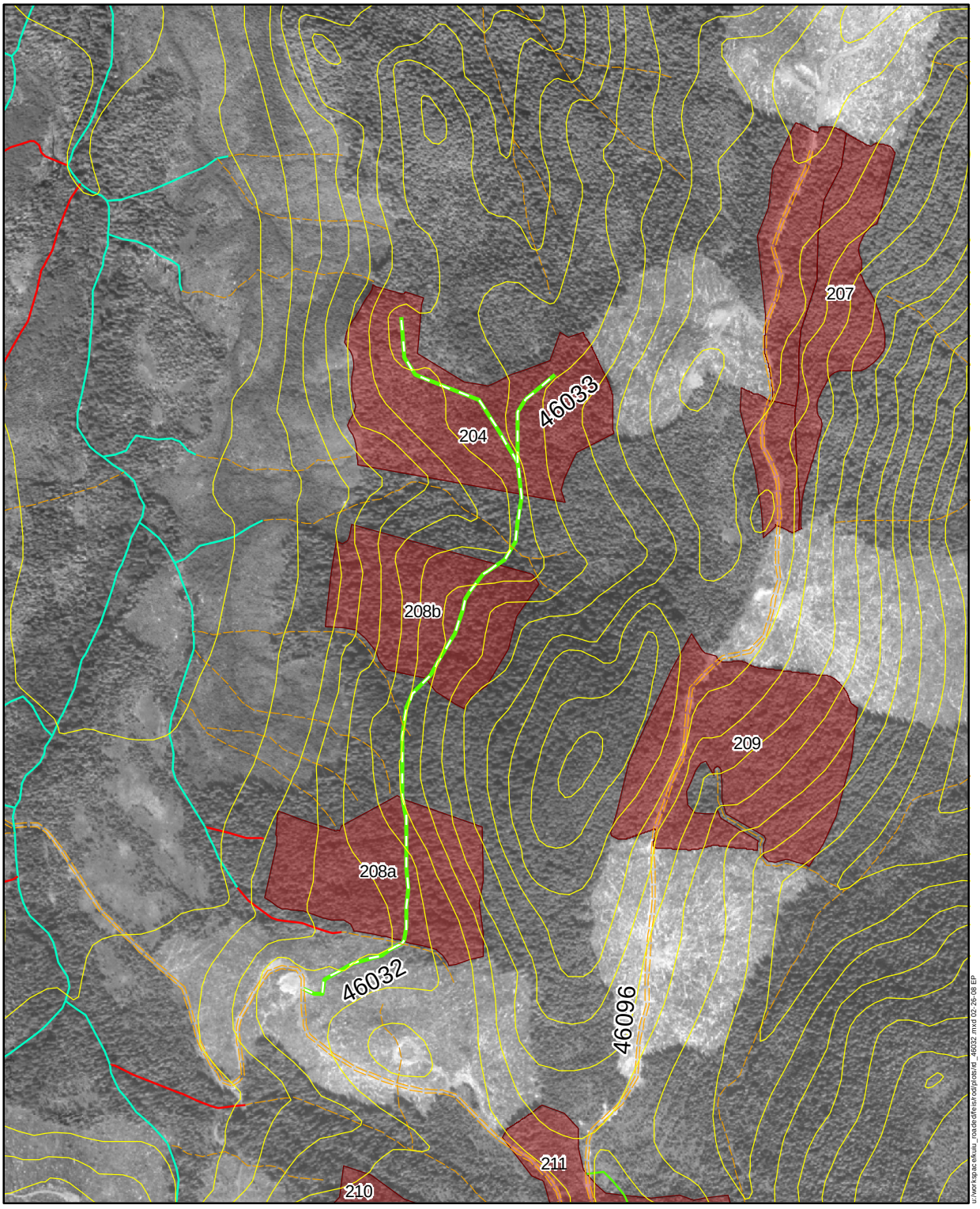
ROAD LOCATION: The road steadily gains elevation between the beginning point at the planned Road 46032. The majority of the road is located on sideslope averaging about 40 to 50%.

WETLANDS: The road location crosses no mapped wetlands (BMP 12.5). This road segment would be constructed as timber access road.

EROSION CONTROL: An erosion control plan for construction and maintenance will be developed by the contractor and approved by the Contracting Officer (BMP 14.5). All areas of organic or mineral soil exposed during construction shall be grass seeded and fertilized (BMP 12.17, 14.8)

ROCK PITS: During periods of high rainfall (as defined in current Regional specifications), blasting operations will be suspended at quarries near potentially unstable sites where ground vibration may induce mass movement (BMP 14.6).

FISH STREAM CROSSINGS: There are no stream crossings that require site-specific design consideration for volume of flow, fish habitat, or other design complexity.



Legend

- Units
- Contours 100 ft.
- Stream Class I
- Stream Class II
- Stream Class III
- Suitable for Passenger Vehicle Road (ML3)
- High Clearance Vehicles Road (ML2)
- Basic Custodial Care (Closed Road) (ML1)
- New NFS Designated Road Construction (ML2)
- Reconditioned Road
- New Temporary Road Construction

Road 46033

0 660 1,320 2,640 Feet

1 inch equals 1,320 feet

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Road Management Objective

Project	System	Land Use Designation
Kuiu	Kuiu	OG TM

Route No	Route Name	Begin Terminus	End Terminus
46034		6417 MP 1.35	

Begin MP	Length	Status	Map Quarter Quad	Photo year, roll, photos
0.00	1.25	Planned		

General Design Criteria and Elements

Functional Class	Service Life	Surface	Width	Design Speed	Critical Vehicle	Design Vehicle
Local	LI	Shot rock	14'	10	Log truck	Log truck

Intended Purpose/Future Use
Local road used for silvicultural activities, will be opened periodically, closed during times of inactivity.

Maintenance Criteria

Bmp	Emp	Operational Maintenance Level (Current Condition)	Objective Maintenance Level (Desired Future Condition)	Remarks
0.00	1.25	2	1	Close after timber sale

Maintenance Narrative
Road will be maintained to facilitate travel by pickup truck at 10 mph. All culverts, ditches and drainage structures will be serviced, and road brushed.

Operation Criteria

Highway Safety Act: No **Jurisdiction:** National Forest ownership

Traffic Management Strategies	**Encourage:**	Hikers, bicycles
	Accept:	High clearance vehicles
	Discourage:	N/A
	Prohibit:	N/A
	Eliminate:	Motorized vehicles on closed section

Travel Management Narrative
Maintain as maintenance level 2 during project activities. Close road after timber harvest (maintenance level 1). Road closure may include any combination of tanktraps at the beginning of the road, pulling some or all drainage structures such as culverts, and/or gating. This road will be further evaluated for the most effective and efficient closure method prior to implementation. Additional stream structures and road cross drain structures may be removed if necessary to address resource concerns.

Approved _____ District Ranger 5/6/08 Date

Site Specific Design Criteria

Road 46034

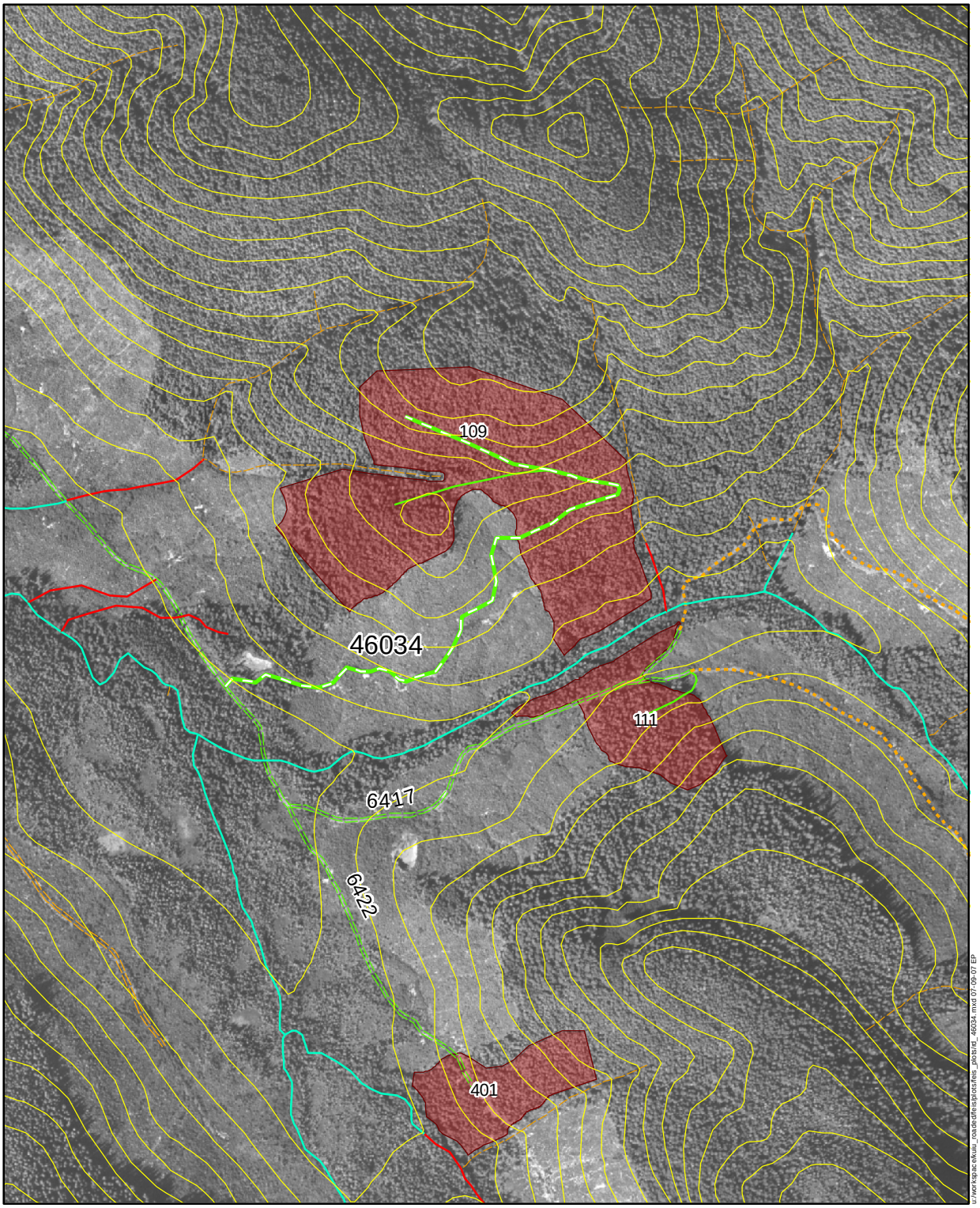
ROAD LOCATION: The road steadily gains elevation between the beginning point at the existing Road 6417. The first 2,400 feet follows the existing roadbed of a decommissioned temporary road. At the end of the existing decommissioned roadbed the new road heads to the northeast and steadly gains elevation through a 15 year old clearcut. The road then enters timber sideslope and continues to gain elevation at an average of 10% to 15%. The majority of the road is located on sideslope averaging about 30 to 40%.

WETLANDS: The road location crosses no mapped wetlands (BMP 12.5). Most of this road segment would be constructed as timber access road.

EROSION CONTROL: An erosion control plan for construction and maintenance will be developed by the contractor and approved by the Contracting Officer (BMP 14.5). All areas of organic or mineral soil exposed during construction shall be grass seeded and fertilized (BMP 12.17, 14.8)

ROCK PITS: During periods of high rainfall (as defined in current Regional specifications), blasting operations will be suspended at quarries near potentially unstable sites where ground vibration may induce mass movement (BMP 14.6).

STREAM CROSSINGS: There are no stream crossings that require site-specific design consideration for volume of flow, fish habitat, or other design complexity.



Legend

- Units
- Contours 100 ft.
- Stream Class I
- Stream Class II
- Stream Class III
- Suitable for Passenger Vehicle Road (ML3)
- High Clearance Vehicle Road (ML2)
- Basic Custodial Care (Closed Road) (ML1)
- New NFS Designated Road Construction (ML)
- Reconditioned Road
- New Temporary Road Construction

Road 46034

0 660 1,320 2,640 Feet

1 inch equals 1,320 feet

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Road Management Objective

Project		System	Land Use Designation
Kuiu		Kuiu	OG TM
Route No	**Route Name**	**Begin Terminus**	**End Terminus**
46035		6415 MP 1.19	
Begin MP	**Length** / **Status**	**Map Quarter Quad**	**Photo year, roll, photos**
0.00	0.31 / Planned		

General Design Criteria and Elements

Functional Class	Service Life	Surface	Width	Design Speed	Critical Vehicle	Design Vehicle
Local	LI	Shot rock	14'	10	Log truck	Log truck

Intended Purpose/Future Use
Local road used for silvicultural activities, will be opened periodically, closed during times of inactivity.

Maintenance Criteria

Bmp	Emp	Operational Maintenance Level (Current Condition)	Objective Maintenance Level (Desired Future Condition)	Remarks
0.00	0.31	2	1	Close after timber sale

Maintenance Narrative
Road will be maintained to facilitate travel by pickup truck at 10 mph. All culverts, ditches and drainage structures will be serviced, and road brushed.

Operation Criteria

Highway Safety Act: No **Jurisdiction:** National Forest ownership

Traffic Management Strategies

Encourage:	Hikers, bicycles
Accept:	High clearance vehicles
Discourage:	N/A
Prohibit:	N/A
Eliminate:	Motorized vehicles on closed section

Travel Management Narrative
Maintain as maintenance level 2 during project activities. Close road after timber harvest (maintenance level 1). Road closure may include any combination of tanktraps at the beginning of the road, pulling some or all drainage structures such as culverts, and/or gating. This road will be further evaluated for the most effective and efficient closure method prior to implementation. Additional stream structures and road cross drain structures may be removed if necessary to address resource concerns.

Approved _____ 5/6/08
District Ranger Date

Site Specific Design Criteria

Road 46035

ROAD LOCATION: The road steadily gains elevation between the beginning point at the existing Road 6415. The first 600 feet is through a 15 year old clearcut. At the end of the clearcut the new road heads to the northwest along timbered sideslope and steadly gains elevation at an average of 10% to 15%. The majority of the road is located on sideslope averaging about 30 to 40%.

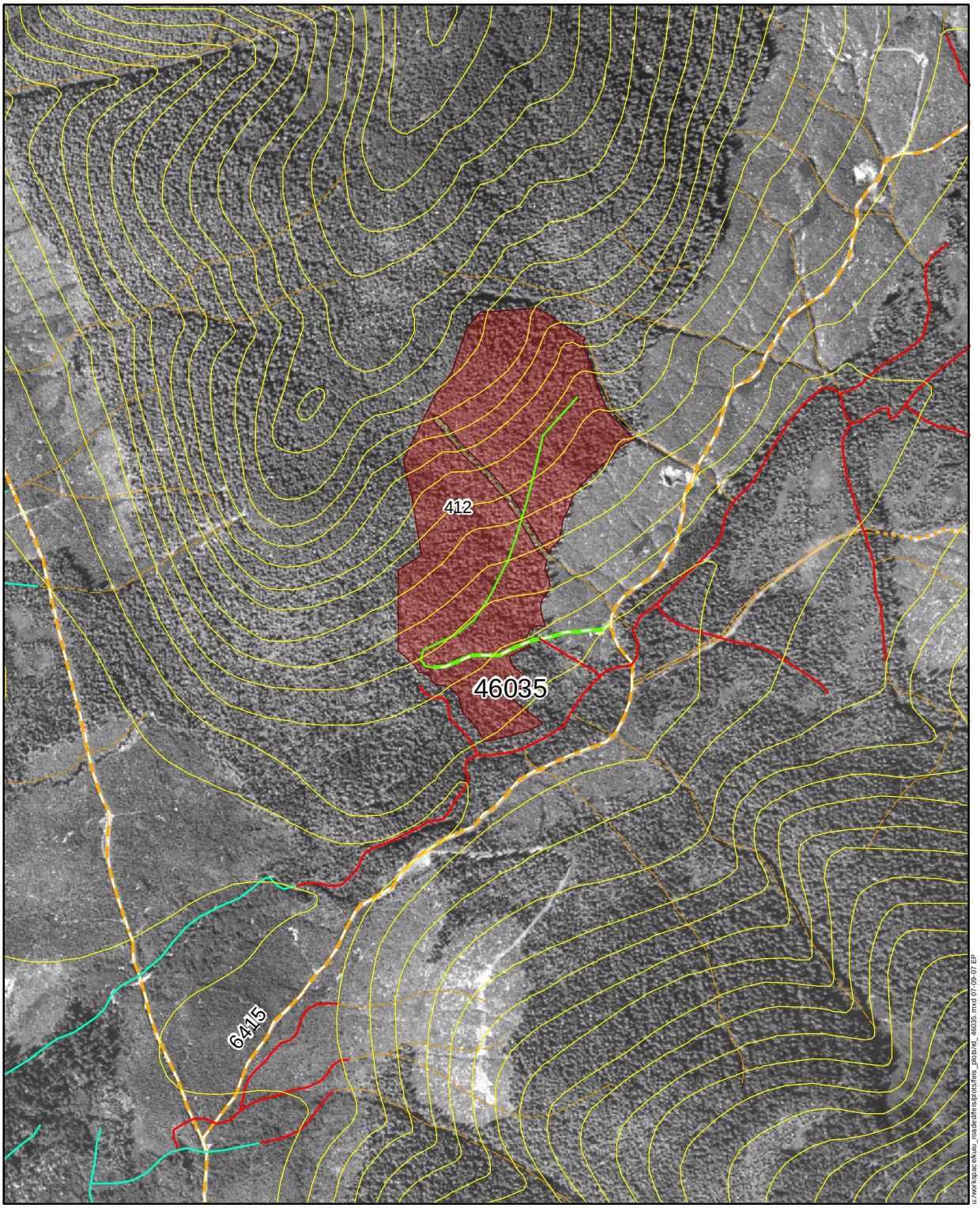
WETLANDS: The road location crosses no mapped wetlands (BMP 12.5). This road segment would be constructed as timber access road.

EROSION CONTROL: An erosion control plan for construction and maintenance will be developed by the contractor and approved by the Contracting Officer (BMP 14.5). All areas of organic or mineral soil exposed during construction shall be grass seeded and fertilized (BMP 12.17, 14.8)

ROCK PITS: During periods of high rainfall (as defined in current Regional specifications), blasting operations will be suspended at quarries near potentially unstable sites where ground vibration may induce mass movement (BMP 14.6).

FISH STREAM CROSSINGS: The road crosses one Class II stream as described below. Implement BMPs 14.14 and 14.17 to minimize stream channel disturbances, related sediment production, adverse impacts on water quality, stream courses, and fisheries resources from the installation of this culvert.

MP 0.18 AHMU II Channel Type HC2 Bankfull Width 10 Incision <1 Gradient 10% Structure 36” CMP No timing restriction required.



Legend

- Units
- Contours 100 ft.
- Stream Class I
- Stream Class II
- Stream Class III
- Suitable for Passenger Vehicle Road (ML3)
- High Clearance Vehicle Road (ML2)
- Basic Custodial Care (Closed Road) (ML1)
- New NFS Designated Road Construction (ML2)
- Reconditioned Road
- New Temporary Road Construction

Road 46035

0 660 1,320 2,640 Feet

1 inch equals 1,320 feet

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Road Management Objective

Project	System	Land Use Designation
Kuiu	Kuiu	OG TM

Route No	Route Name	Begin Terminus	End Terminus
46021	Security Ridge	6204 MP 4.59	

Begin MP	Length	Status	Map Quarter Quad	Photo year, roll, photos
0.00	1.98	Planned/Existing	PA DI SW	'98 198-78, 106

General Design Criteria and Elements

Functional Class	Service Life	Surface	Width	Design Speed	Critical Vehicle	Design Vehicle
Local	LI	Shot rock	14'	10	Log truck	Log truck

Intended Purpose/Future Use
Local road used for silvicultural activities, will be opened periodically, closed during times of inactivity. Serves as a telephone receiving area.

Maintenance Criteria

Bmp	Emp	Operational Maintenance Level (Current Condition)	Objective Maintenance Level (Desired Future Condition)	Remarks
0.00	1.38	2	1	Close after timber sale
1.38	1.98	2 (planned)	1	Close after timber sale

Maintenance Narrative
Road will be maintained to facilitate travel by pickup truck at 10 mph. All culverts, ditches and drainage structures will be serviced, and road brushed.

Operation Criteria

Highway Safety Act: No **Jurisdiction:** National Forest ownership

Traffic Management Strategies	**Encourage:**	Hikers, bicycles
	Accept:	High clearance vehicles
	Discourage:	N/A
	Prohibit:	N/A
	Eliminate:	Motorized vehicles on closed section

Travel Management Narrative
Extension for road is planned. Maintain road including new extension as maintenance level 2 during project activities. Close entire road length after timber harvest (maintenance level 1). Road closure may include any combination of tanktraps at the beginning of the road, pulling some or all drainage structures such as culverts, and/or gating. This road will be further evaluated for the most effective and efficient closure method prior to implementation. Additional stream structures and road cross drain structures may be removed if necessary to address resource concerns.

Approved _____ District Ranger _____ 5/6/08 Date

Site Specific Design Criteria

Road 46021 (MP 1.38-1.98)

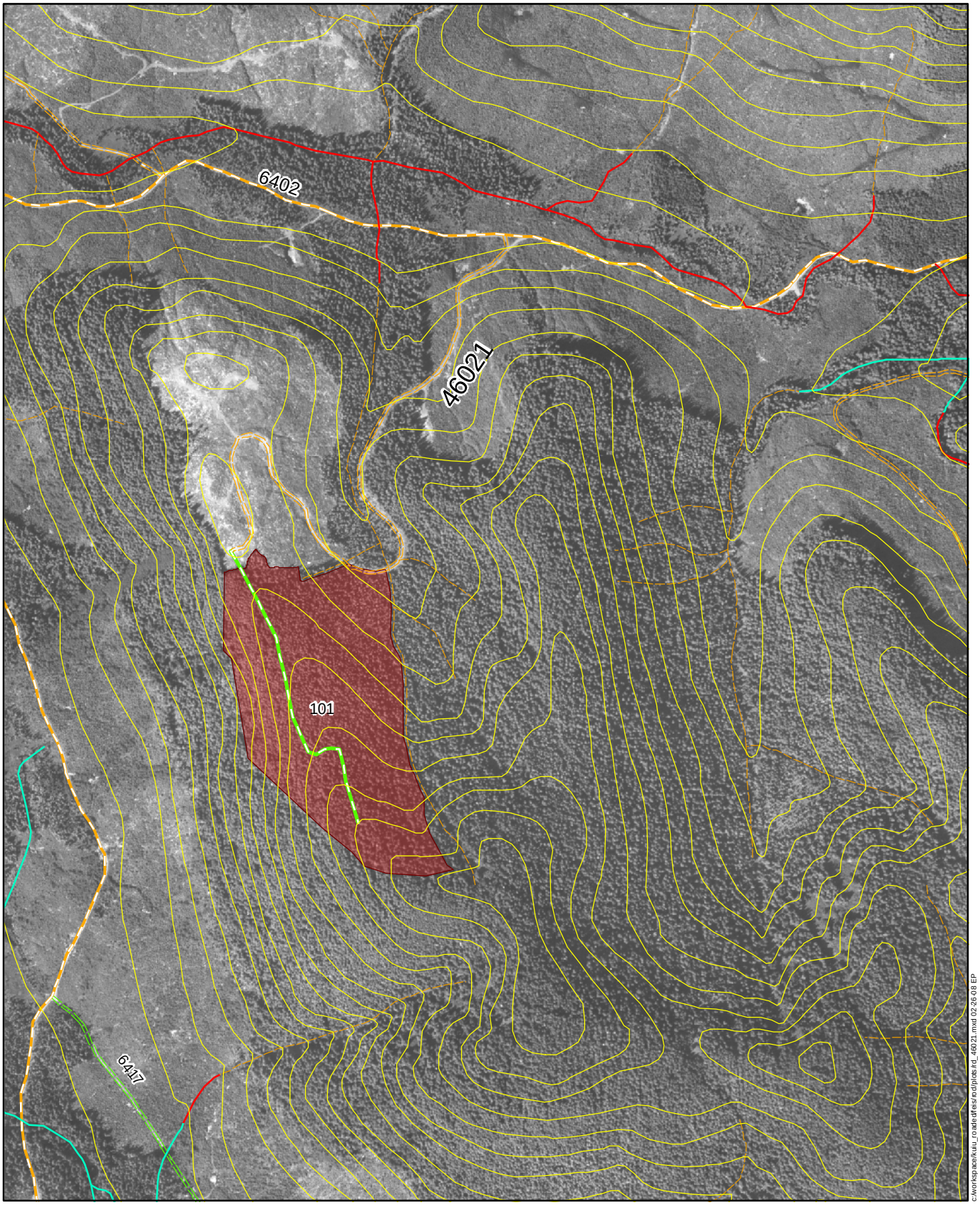
ROAD LOCATION: The road steadily gains elevation between the beginning point at the end of existing Road 46021. The first 400 feet is through a 15 year old clearcut. At the end of the clearcut the new road heads to the south along timbered sideslope steadly gains elevation at an average of 10% to 15%. The majority of the road is located on sideslope averaging about 30 to 40%.

WETLANDS: The road location crosses no mapped wetlands (BMP 12.5). This road segment would be constructed as timber access road.

EROSION CONTROL: An erosion control plan for construction and maintenance will be developed by the contractor and approved by the Contracting Officer (BMP 14.5). All areas of organic or mineral soil exposed during construction shall be grass seeded and fertilized (BMP 12.17, 14.8)

ROCK PITS: During periods of high rainfall (as defined in current Regional specifications), blasting operations will be suspended at quarries near potentially unstable sites where ground vibration may induce mass movement (BMP 14.6).

FISH STREAM CROSSINGS: There are no stream crossings that require site-specific design consideration for volume of flow, fish habitat, or other design complexity.



Road 46021

Legend

- Units
- Contours 100 ft.
- Stream Class I
- Stream Class II
- Stream Class III
- Road Suitable for Passenger Vehicles (ML3)
- High Clearance Vehicle Road (ML2)
- Basic Custodial Care (Closed Road) (ML1)
- New NFS Designated Road Construction (ML2)
- Reconditioned Road
- New Temporary Road Construction

0 660 1,320 2,640 Feet

1 inch equals 1,320 feet

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Road Management Objective

Project	System	Land Use Designation
Kuiu	Kuiu	OG TM

Route No	Route Name	Begin Terminus	End Terminus
6427	Security Bay	6427 MP 3.44	

Begin MP	Length	Status	Map Quarter Quad	Photo year, roll, photos
0.00	3.66	Existing/Planned	PA DI SW	'98 198-103, 104, 81

General Design Criteria and Elements

Functional Class	Service Life	Surface	Width	Design Speed	Critical Vehicle	Design Vehicle
Local	LI	Shot rock	14'	10	Log truck	Log truck

Intended Purpose/Future Use
Access for silvicultural activities. Close road until needed in the future.

Maintenance Criteria

Bmp	Emp	Operational Maintenance Level (Planned Initial Condition)	Objective Maintenance Level (Desired Future Condition)	Remarks
0.00	1.15	2	2	Remain open for timber sale
1.15	3.44	1	2	Open for timber sale
0.00	3.44	2	1	Close after timber sale
3.44	3.66	2 (planned)	1	Close after timber sale

Maintenance Narrative
Road will be maintained to facilitate travel by pickup truck at 15 mph. All culverts, ditches and drainage structures will be serviced, and road brushed.

Operation Criteria

Highway Safety Act: No **Jurisdiction:** National Forest ownership

Traffic Management Strategies

Encourage:	Hikers, bicycles
Accept:	High clearance vehicles
Discourage:	N/A
Prohibit:	N/A
Eliminate:	Motorized vehicles on closed section

Travel Management Narrative
Extension for road is planned. Maintain road including new extension as maintenance level 2 during project activities. Close entire road length after timber harvest (maintenance level 1). Road closure may include any combination of tanktraps at the beginning of the road, pulling some or all drainage structures such as culverts, and/or gating. This road will be further evaluated for the most effective and efficient closure method prior to implementation. Additional stream structures and road cross drain structures may be removed if necessary to address resource concerns.

Approved _____ District Ranger

5/6/08
Date

Site Specific Design Criteria

Road 6427 (MP 3.44-3.66)

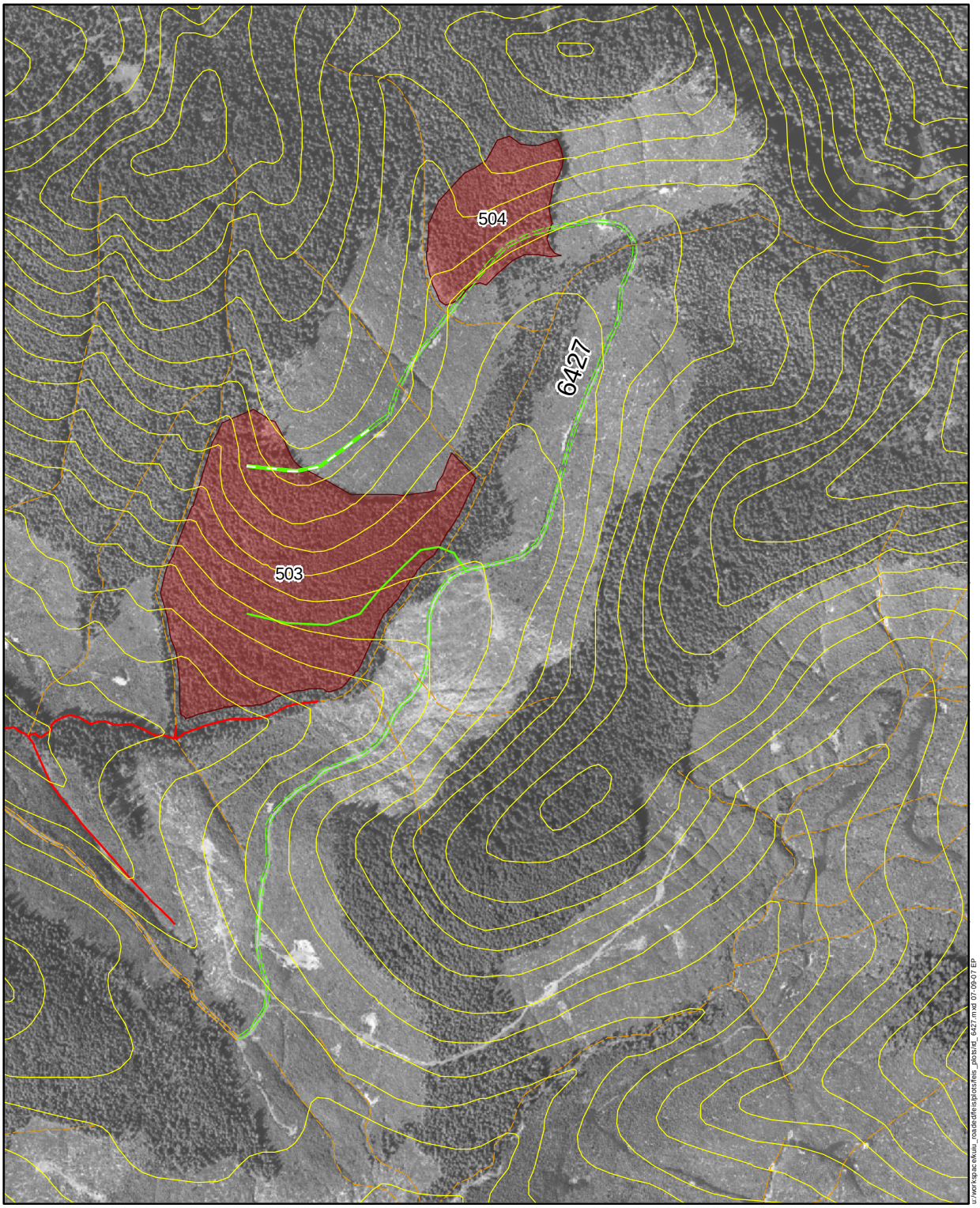
ROAD LOCATION: The road steadily gains elevation between the beginning point at the end of existing Road 6427. The first 700 feet is through a 15 year old clearcut. At the end of the clearcut the new road heads to the southwest along timbered sideslope and steadly gains elevation at an average of 10% to 15%. The majority of the road is located on sideslope averaging about 30 to 40%.

WETLANDS: The road location crosses no mapped wetlands (BMP 12.5). This road segment would be constructed as timber access road.

EROSION CONTROL: An erosion control plan for construction and maintenance will be developed by the contractor and approved by the Contracting Officer (BMP 14.5). All areas of organic or mineral soil exposed during construction shall be grass seeded and fertilized (BMP 12.17, 14.8)

ROCK PITS: During periods of high rainfall (as defined in current Regional specifications), blasting operations will be suspended at quarries near potentially unstable sites where ground vibration may induce mass movement (BMP 14.6).

FISH STREAM CROSSINGS: There are no stream crossings that require site-specific design consideration for volume of flow, fish habitat, or other design complexity.



Legend

- Units
- Contours 100 ft.
- Stream Class I
- Stream Class II
- Stream Class III
- Suitable for Passenger Vehicle Road (ML3)
- High Clearance Vehicle Road (ML2)
- Basic Custodial Care (Closed Road) (ML1)
- New NFS Designated Road Construction (ML2)
- Reconditioned Road
- New Temporary Road Construction

Road 6427

0 660 1,320 2,640 Feet

1 inch equals 1,320 feet

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Appendix 2

FEIS Errata

Errata

Kuiu Timber Sale Area
Final Environmental Impact Statement

Chapter 3

Deer Habitat and Subsistence Use

In reviewing the FEIS wildlife analysis for productive old-growth (POG) and high volume/low elevation POG in the WAA, inconsistencies were found in Tables 3-12 and 3-13 (pp. 3-26 and 3-27) and errors were carried throughout the table. Corrections were made to this table and are found in the Appendix 2, Errata to the FEIS. The conclusions of the effects analysis did not change with these corrections.

Table 3-13 used two definitions of POG; one calculated using Class 6 and 7 (low elevation), the other using high, medium and low (low elevation) volume strata. The table then compares these "mixed" numbers. Also, while the table labels the acres as high volume below 800 feet, it became clear in review that the numbers were representing high, medium and low volume strata. The numbers in Table 3-13 have been rerun to all reflect low elevation high volume strata. The conclusions of the effects analysis did not change with these corrections.

Table 3-12. Effects of the proposed alternatives on POG habitat[1] within the Project Area (acres remaining after harvest)

Productive Old -growth	Historical Condition (1954)	Alt 1 (Current)	Alt 2	Alt 3	Alt 4	Alt 5
Acres	**39,915**	30,586	30,116	29,812	29,221	29,403
High volume strata POG		21,840	21,542	21,220	20,688	20,911
Medium volume strata POG		6,741	6,677	6,608	6,558	6,517
Low volume strata POG		2,004	1,986	1,983	1,974	1,974
Percent current POG remaining after harvest		100%	98%	97%	96%	96%
Percent historic POG remaining after harvest		77%	75%	75%	73%	74%

[1]Acres of volume strata harvested in each alternative does not equal the total unit size due to some "non" POG acres identified in GIS. These acres may be "holes" of unidentified volume in the GIS layer, or MMI-4 Soils (see the Soils and Geology section in this chapter).

Table 3-13. Acres of High Volume Strata below 800 feet Harvested within the Project Area

	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
Total acres planned for harvest	0	478	786	1,387	1,208
Acres of high volume harvested below 800'	0	163	164	349	287
Acres of high volume harvested with 50% basal area retention below 800'	0	88	113	127	0
Acres of high volume clearcut below 800'	0	75	51	222	287
Percent of total acres of high volume harvested below 800'	0	34%	21%	25%	24%
Project Area **Current Condition: 9,488 acres of high volume strata below 800 feet**					
		Alt 2	**Alt 3**	**Alt 4**	**Alt 5**
Acres of Low Elevation/High Volume strata remaining in Project Area after harvest		9.325	9,324	9,160	9,201
Percent acres of high volume strata remaining in Project Area after harvest		98%	98%	97%	97%
WAA 5012 **Current Condition: 30,090 acres of high volume strata below 800 feet**					
		Alt 2	**Alt 3**	**Alt 4**	**Alt 5**
Acres of Low Elevation/High Volume strata remaining in WAA after harvest		29,927	29,926	29.741	29,802
Percent acres of high volume strata remaining in WAA after harvest		99%	99%	99%	99%

The comparison table in the FEIS, Chapter 2, (page 2-14) for the rows with acres of POG maintained within the WAA was inconsistent with the number from the Chapter 3 analysis (Table 3-11). The following row from Table 2-2 contains the adjustments to be consistent with Chapter 3.

Table 2-2 Comparison of alternatives by issue and effects

Issue 2 – Deer Habitat and Subsistence Use					
	Alt 1	**Alt 2**	**Alt3**	**Alt 4**	**Alt 5**
Acres of POG maintained within the WAA	90,856	90,378	90,070	89,469	89,648

Watershed Cumulative Effects

Labels on Chart 3-1 and Chart 3-2 on pages 84-84 of Chapter 3 in the FEIS were corrected to state that the figures do not account for timber harvest that has been approved under the Crane and Rowan Mountain Timber Sale or road clearings. Previous labels erroneously stated that calculations included acres approved under the Crane and Rowan Timber Sales. The effect is negligible. The intent of both figures is to visually display the rapid decline in 30-year cumulative harvest levels among project-area watersheds, and how the trend is only minimally affected if Alternative 4 proposed timber harvest occurred.

Also, timber harvest summary tables in the direct and indirect effects for alternative comparisons were clarified by adding a footnote to each table stating values represent a 2007 implementation (values in table were assumed to be additive and were applied to 2007 “base” levels).

Wetlands

While temporary roads built on wetlands were reported in the FEIS, the miles of new NFS road on wetlands were not. The Errata adds this information to Table 3-66 and Table 2-2 (Comparison Table reprinted in the ROD as Table R-1) as well as conclusions of the effects of this road construction. While actual miles proposed on wetlands have changed, the expectation that wetland functions will not be impaired has not changed. Cumulative effects to wetlands resulting from this project and reasonably foreseeable projects are still expected to be minor.

Table 3-66 Proposed new road miles crossing wetlands

Wetland Type	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5
Temporary Road Miles					
Forested Wetland	0.0	0.1	0.1	0.4	0.4
Muskeg/Forested Wetland Mosaic	0.0	0.0	0.0	0.2	0.2
Temporary Road Miles to be Constructed on Wetland	0.0	0.1	0.1	0.6	0.6
New NFS road miles					
Forested Wetland	0.0	0.0	0.2	0.1	0.2
Muskeg/Forested Wetland Mosaic	0.0	0.1	0.6	0.6	0.6
New NFS Road Miles to be Constructed on Wetland	0.0	0.1	0.8	0.7	0.8
Total Road Miles to be Constructed on Wetland	0.0	0.2	0.9	1.3	1.4

Unit Card Maps

Some of the FEIS unit card maps contained symbols in the legend which were not depicted accurately on the actual unit maps in Appendix 2. Unit card narratives and FEIS discussions were accurate in the classification of roads. The coding for these maps has been adjusted in the Selected Alternative unit card maps.